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Administration**

Aviation Maintenance Alerts

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**Improve Reliability-
Interchange Service
Experience**

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**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC 20590**

AVIATION MAINTENANCE ALERTS

The Aviation Maintenance Alerts provide a common communication channel through which the aviation community can economically interchange service experience and thereby cooperate in the improvement of aeronautical product durability, reliability, and safety. This publication is prepared from information submitted by those who operate and maintain civil aeronautical products. The contents include items that have been reported as significant, but which have not been evaluated fully by the time the material went to press. As additional facts such as cause and corrective action are identified, the data will be published in subsequent issues of the Alerts. This procedure gives Alerts' readers prompt notice of conditions reported via Malfunction or Defect Reports. Your comments and suggestions for improvement are always welcome. Send to: FAA; ATTN: Designee Standardization Branch (AFS-640); P.O. Box 25082; Oklahoma City, OK 73125-5029.

AIRPLANES

AMERICAN CHAMPION

American Champion; Model 7ECA; Wing Spar Cracks; ATA 5711

During an annual inspection, the technician found cracks in a wing spar.

The aft wood spar had compression cracks at the "mid-span" position. This is the same location where the wing strut attaches. It appeared the crack originated at the top surface of the spar and traveled down to a fastener hole used to secure the wing strut.

Part total time not reported.

American Champion; Model 8KCAB; Decathlon; Wheel Brake Defect; ATA 3242

During winter conditions, the pilot completed an aerobatic flight and noticed leaking brake fluid.

A system inspection revealed the right brake fluid line had come off the plastic "T" fitting on the brake fluid reservoir. The brake system on this aircraft uses plastic tubes without using clamps at either the reservoir "T" fitting or the brake cylinder "barb" fittings. The aircraft

records indicate no one performed maintenance on the brake system since the aircraft was new.

The submitter suggests that the manufacturer evaluate the brake system and issue a repair kit that includes line clamps for the plumbing.

Part total time-325 hours.

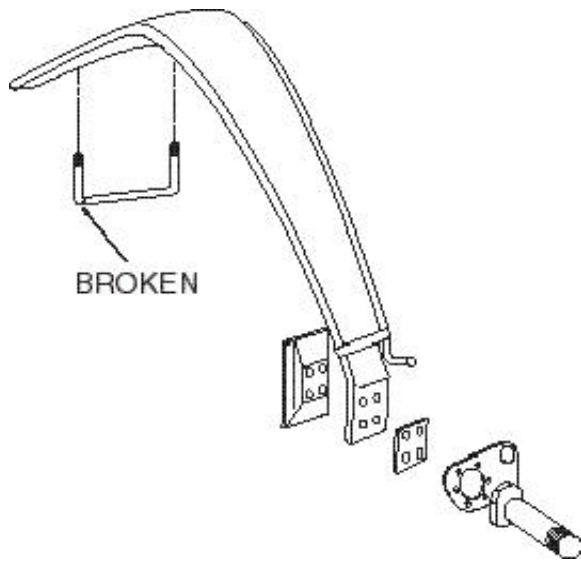
American Champion; Model 8KCAB; Decathlon; Landing Gear Failure; ATA 3211

During a landing sequence, the pilot noticed that the right main landing gear moved fore and aft when rolling down the runway.

An investigation disclosed that the right main gear "U-bolt" attachment had broken. The location of the broken "U-bolt" (P/N 1-9805) is at the point where the gear leg came out of the fuselage. This allowed the gear leg to pivot approximately 12 inches fore and aft. (Refer to the following illustration.)

The submitter suggested frequent inspections of the "U-bolt" attachment.

Part total time-1,277 hours.



BEECH

Beech; Model A36; Bonanza; Defective Mixture Control Cable; ATA 7602

During an annual inspection, the mixture control cable seemed loose and had free play.

Further investigation revealed that the swaged portion of the mixture cable (P/N 36-380084-5) was slipping. When the technician applied slight hand pressure to the swage, it came off the cable. The submitter did not give a cause for this defect.

This area deserves your full attention during inspections and maintenance.

Part total time-2,827 hours.

Beech; Model A36; Bonanza; Engine Exhaust System Crack; ATA 7810

During an annual inspection, the submitter found a crack on the engine exhaust system.

The 1.25-inches long crack originated on the left outboard exhaust pipe (P/N 35-950005-1) at the number 4 cylinder. There were no previous reports about adverse engine

operating parameters and no associated damaged. The submitter did not offer a cause for this defect.

Part total time-2,372 hours.

Beech; Model B55; Baron; Ice Removal System Failure; ATA 3010

The pilot reported the right wing deice system failed.

An inspection revealed the right wing deice boot flexible line chafed and melted. The deice line contacted the aluminum pneumatic pump output line. These two lines are just aft of the engine firewall in the nacelle. Chafing and exposure to excessive heat caused this failure. This area has limited access and may require the technician to "feel" for the condition and proper clearance of the plumbing line.

The submitter recommended diligent and frequent inspections.

Part total time-3,368 hours.

Beech; Model E55; Baron; Structural Corrosion Damage; ATA 5711

During a scheduled inspection, technicians discovered severe corrosion on the right wing spar cap.

The corrosion progressed to the point of exfoliation and disintegration of the metal. The damage penetrated the entire thickness of the wing spar cap (P/N 95-110022-4). The affected area started at wing station 70 and continued outboard approximately 8 inches. The corrosion compromised the spar cap to the point that it would hardly bear its own weight, and wing failure was eminent.

Older and high-time aircraft deserve your full attention to structural integrity during maintenance and inspections.

Aircraft total time-4,137 hours.

Beech; Model 58; Baron; Rudder Control Tube Damage; ATA 2720

During a scheduled inspection, a technician discovered a scored and cracked rudder push-pull tube.

The rudder control tube (P/N 35-524144-8) is just below an access panel. Previously, someone used an excessively long panel screw to secure the panel. The screw contacted the rudder control tube causing scoring and cracking. Close attention to detail should prevent this type of problem.

Part total time-239 hours.

Beech; Model B60; Duke; Improper Oil Cooler Repair; ATA 7921

The owner delivered the aircraft to maintenance and reported the engine was leaking oil.

An investigation disclosed that the oil leak source was the oil cooler (Niagara P/N 10046A). Previously, someone removed the oil cooler, and made a repair using an epoxy material that failed. The submitter recommended eliminating the use of epoxy to repair oil coolers. The exposure of the epoxy material to high temperatures and engine oil may cause it to degrade rapidly.

Part total time not reported.

Beech; Model 76; Duchess; Wing Rib Cracks; ATA 5751

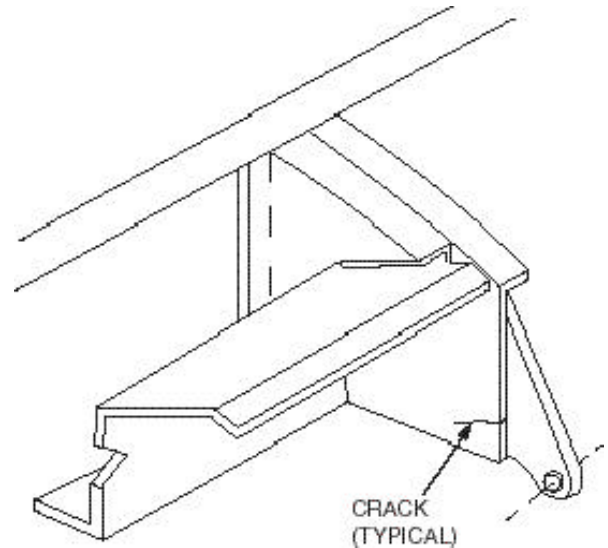
During a scheduled inspection, the technician found cracks in two wing ribs

The cracks appeared where the inboard and outboard aileron hinge plates (P/N 105-100011-51) were attached. (Refer to the following illustration.) The submitter stated, "The same problem has been found on

other aircraft of the same model. In all cases, the cracks were repaired by installing a doubler on each defective wing rib."

This area deserves your attention during inspections.

Part total time-4,033 hours.

**Beech; Model E90; King Air; Wheel Crack; ATA 3246**

During a scheduled inspection, the submitter conducted a dye-penetrant inspection on the landing gear wheel assemblies in accordance with the B. F. Goodrich maintenance instruction manual.

The submitter found a crack in one of the wheel halves (P/N 50-300010-87). The crack originated inside a tie bolt hole, extended

outward in two directions, and traveled past the wheel half packing groove. He found corrosion pits around the inside mating surface of all the tie bolt holes, and speculated the crack began at one of the corrosion pits.

The submitter suggested that the wheel assembly manufacturer establish a life limit or require a nondestructive inspection at frequent intervals.

Part total time-2,500 hours.

Beech; Model B-100; King Air; Deice System Failure; ATA 2140

The flightcrew reported the empennage deice system boots would not inflate.

The technician discovered a collapsed flexible deice supply line displaying evidence of heat damage. The deice line was routed close to a heat supply duct located under the floor. A seam in the heat duct split and caused heated air to be directed onto the deice line. The heated air softened the deice line. The deice line collapsed when vacuum was supplied to the deice boots.

Part total time-6,417 hours.

Beech; Model B-100; King Air; Landing Gear Failure; ATA 3230

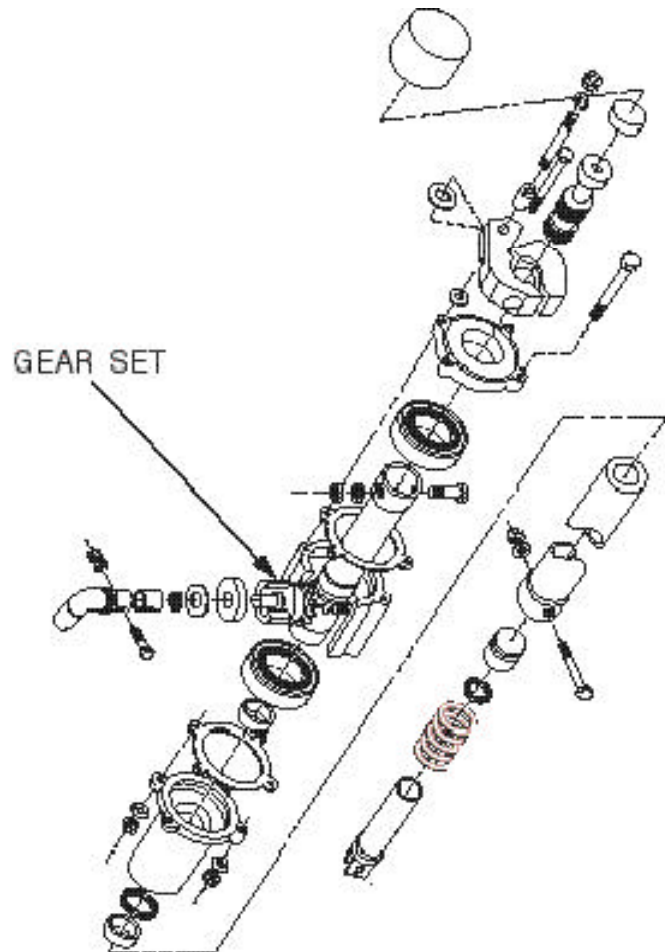
A Federal Aviation Administration (FAA) Airworthiness Inspector from the Charlotte, North Carolina Flight Standards District Office furnished the following article.

During a landing approach, the right main landing gear would not extend. Both the normal and emergency extension systems failed, requiring a landing using only the left main and nose gear. The aircraft sustained substantial damage during the landing.

An inspection of the landing gear system revealed that the gear drive shaft sheared. This disabled the actuator (P/N 99-810057-651) and prevented the landing gear from being extended. The drive shaft failed at the right

gear actuator internal drive "gear set" (P/N 99-810127-1). (Refer to the following illustration.)

Part total time not reported.



CESSNA

Cessna; Model 172G; Skyhawk; Control Yoke Corrosion; ATA 2701

After landing, the pilot secured the aircraft and applied the gust lock. That night, wind gusts up to approximately 75 miles per hour directly struck the aircraft's tail.

The next morning the pilot examined the aircraft and noticed that the elevator had dropped, in spite of the fact that the gust lock was still in place. The submitter first speculated that the control cables stretched a bit.

When he removed the gust lock and pulled the yoke to the full-aft position, he could raise the elevator an additional couple of inches. This eliminated doubts about cable problems. The problem was obviously elsewhere, even though the aircraft appeared to still have full movement of the controls. The next morning he noticed the elevator drooped even lower than the previous day, and he contacted a maintenance technician.

The technician noticed the elevator drooped to its full extent and no elevator movement occurred when he moved the control yoke in the cockpit. An inspection revealed the control yoke totally broke as a result of internal rust rendering the walls of the yoke paper thin. The rust caused the control yoke to break in a vertical portion of the control "U" between the pivot point and the elevator push-pull tube.

The submitter feels extremely lucky that he detected the problem while the aircraft was parked. He stated that owners and operators of older aircraft should make notes of this problem and properly employ inspection techniques before an in-flight catastrophe occurs.

Part total time unknown.

Cessna; Model 172P; Skyhawk; Engine Stoppage; ATA 2810

The aircraft made four forced landings due to engine stoppage, including one off-airport landing with no apparent damage before the cause was discovered.

The pilot suspected carburetor ice at first, but after the last off-airport landing the engine would not start. The left and right wing fuel tanks were sumped and approximately 20 ounces of water was present.

When the aircraft was returned to its home-based airport, technicians hanged it and dyed water was introduced to the top left wing through access panels. A total 14 ounces of water was placed in the tank, but only 6 ounces drained out of the sump, even after rocking the wings.

The submitter stated the aircraft never received any repairs or modification to the fuel area. Currently, the water stands and eventually migrates into the fuel system. He recommends the aircraft manufacturer devise a better method for draining water to the wing root trailing edge.

Part total time-1,060 hours.

Cessna; Model 180J (C180); Door Handle Bushing Separation; ATA 5210

The spline bushing (P/N 0517039-2) on the aircraft's door handle separated from the casting.

The technician stated this is a chronic and recurring problem with these new handles. He has replaced many door handles that have separated in a similar fashion, and he notes that it seems to happen almost exclusively to these new handles.

The submitter suggests that Cessna resolve this faulty part design or the assembly procedure.

Part total time-new aircraft.

Cessna; Model 208B (C208); Super Cargomaster; Inoperative Aileron Trim; ATA 2721

The pilot discovered and reported that the aileron trim was inoperative.

An inspection revealed the roll pin (P/N NAS561-3-8) securing the aileron trim chain sprocket to the aileron trim wheel assembly (P/N 2613349-4) worked out of its shaft which caused an inoperative aileron trim.

The technician reinstalled the roll pin following the manufacturer's specifications, and safety wired the remaining roll pins to prevent reoccurrence.

Part total time-1,284 hours.

Cessna; Model 210M (C210); Centurion; Accumulator Snapping Failure; ATA 3231

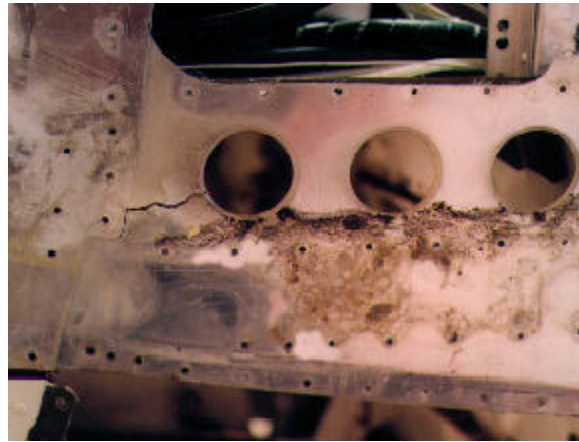
During flight, the pilot cycled the landing gear, received a green "gear safe" light, heard a loud bang, and lost hydraulic pressure. The pilot made a safe landing.

When the technician inspected the aircraft, he discovered the left main gear door accumulator (P/N 1281033-1) failed at the snapping. The stringer in that area had become crushed and a hole was visible in the exterior skin and was replaced. (Refer to the following illustration.)

The submitter speculates the part simply failed or failed resulting from improper installation. The part had 315 cycles and 177 hours since the last overhaul. The maintenance manual does not contain specific inspection criteria for this part.

The submitter stated the part should be reinspected 25 to 50 hours after resealing maintenance, and it should be added to the main landing gear overhaul list.

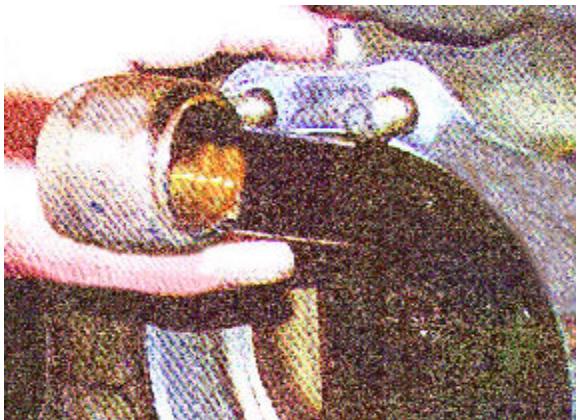
Part time since overhaul-177 hours.

**Cessna; Model T210N (C210); Turbo Centurion; Connecting Rod Bushing; ATA 8530**

During an engine repair inspection, the technician discovered a rod bushing on the number 2 cylinder's connecting rod was pushed out of place approximately 1/8 inch. (Refer to the following illustration.)

Further inspection revealed two more bushings with the same problem. The engine was "top overhauled" 1,208 hours after a major overhaul. It operated an additional 361 hours with the improperly-installed bushings. The submitter determined the previous mechanic used a great amount of force when he installed the piston pins moving the bushing out of their proper position.

Part time since major overhaul-1,569 hours.



Cessna; Model 310R (C310); Fuel Transfer Pump Electrical Short; ATA 2824

While in flight, the pilot noticed a popped right landing light circuit breaker. When the pilot reset the breaker, it popped again.

Investigation revealed that the right main fuel tank transfer pump (P/N 476411) caused the circuit to short. Both the landing light and the transfer pump are on the same circuit.

The pump showed signs of arcing and burn marks at the point where shielded power wires enter the pump.

Part total time-132 hours.

Cessna; Model 402C (C402); Businessliner; Cracked Hydraulic Line; ATA 2910

During flight, the pilot noticed that both the left and right hydraulic flow lights began flickering. He lowered the landing gear and made a safe, precautionary landing.

The technician discovered a completely empty hydraulic reservoir. After he performed a hydraulic pressure check on the right and left pressure lines, he discovered the left pressure line (P/N 5100111-99) had cracked at a bend

radius between the flow switch and the elbow. After replacing the line and pressure checking and cycling the gear, no more leaks occurred.

Part total time-15,072 hours.

Cessna; Model 421C (C421); Golden Eagle; Window Cracks; ATA 5620

The technician disassembled the airframe for refurbishment. He discovered the left pilot side window (P/N 5111605-3) exhibited compression-type flaking, chipping damage, and cracks emanating from the screw holes to the edge of the pane.

The same problem was found on the windows associated with the cabin door, the left side most-aft portal, the right emergency exit, and the window immediately aft of that exit, as well as, the most-aft windows on the right side. All windows had their backup ring in place, with the exception of the previously mentioned pilot side window.

The submitter noted the presence of sealer in some of the damaged areas and speculated the damage occurred during the installation process.

The submitter suggested extreme care be taken during installation to ensure the holes are the proper size and correctly aligned. The screws must be torqued slowly, evenly, and in small increments.

Part total time-3,437 hours.

Cessna; Model 550 (C550); Citation II; Chafed Ground Fault Transformer; ATA 2460

When the left engine was running with its generator on line, trying to start the right engine would cause the left generator to drop off line, and the engine would not rotate.

An investigation revealed the left engine's ground fault transformer (P/N 9910494-1) was rendered useless due to chafing against the cowlings attach bracket. Further inspection

revealed the same problem occurring on the right engine's pylon ground fault transformer. The technician replaced both parts.

The submitter suggests that Cessna either redesign the attach brackets or reposition items that might come in contact with the brackets under normal usage. This chafing may have caused a dual generator system failure in flight.

Part total time-165 hours.

DeHAVILLAND

DeHavilland; Model DHC-7; Defective Elevator Control Push-Pull Rod; ATA 2730

During maintenance, the technician found a crack on an elevator push-pull tube (P/N 72760182-001).

The crack appeared approximately 4 inches from the lower end of the push-pull tube. The metal around the crack pushed outward. Further inspection revealed the rod-end installed at the top end of the tube was not correct. The improper rod-end had a slot cut down the length of the threads; therefore, the submitter suspected that water entered the tube, collected, froze, and caused the tube to rupture.

Part total time unknown.

DIAMOND

Diamond; Model DA20-C1; Katana; Engine Starter Failure; ATA 8011

The pilot reported the engine starter made a grinding sound and the engine would not start.

The technician removed the starter (P/N 654046) and discovered a sheared drive gear. The gear wore against the crankshaft gear (P/N 641096) and caused metal contamination throughout the engine.

Due to the low number of operating hours, the submitter speculated the starter gear may have been defective when it was installed.

Part total time-63 hours.

Diamond; Model DA20-C1; Katana; Propeller Defect; ATA 6114

During a 100-hour inspection, the technician checked the propeller bolts for proper torque and discovered they were less than the specified torque.

The technician gave the bolts the proper torque value and completed the inspection. After 10-hours of operating time, the technician rechecked the propeller bolt torque and discovered it was again below the proper value.

This prompted removal of the Sensenich propeller for a thorough inspection. The technician found a crack in the propeller hub. The crack extended approximately .5 inch from one bolt hole and penetrated to an approximate depth of .0625 inch. The technician sent the propeller to the manufacturer for inspection.

As in this case, loose fasteners may indicate a more serious problem and deserve a thorough investigation.

Part total time not reported.

LEAR

Lear; Model 25D; Hydraulic System Pressure Loss; ATA 2910

During a descent for landing, the pilot noticed a loss of hydraulic system pressure. After diverting to an alternate airport, it was necessary to use the emergency landing gear extension system and emergency braking.

An investigation revealed that a hydraulic line in the aft maintenance bay had chafed through the wall thickness. Someone installed a clamp improperly and the line contacted the aircraft structure on the left side.

The manufacturer issued Service Bulletin (SB) 25-236, dated May 27, 1986, which contains specific instructions for providing adequate clearance for the hydraulic system plumbing in this area. The submitter recommended that all operators of like aircraft comply with the SB as soon as possible.

Part total time-2,689 hours.

NAVION

Navion; Models A and B; Main Landing Gear Wear and Failure; ATA 3230

The pilot reported that after takeoff, the left main landing gear would not retract. This incident brought to light a problem common to Models A and B Navion aircraft.

To conduct a landing gear operational test, the technician took the aircraft to a hangar and placed it on jacks. When he used the auxiliary hand pump, he heard a grinding sound coming from the left main gear. After he removed the triangular-shaped inspection panel, located just aft of the left gear well, he discovered a broken pivot shaft (P/N 143-33153). The pivot shaft failure occurred at the inboard cotter key hole, which is next to the hydraulic cylinder universal. Apparently, when the pivot shaft broke, it bent the two bulkheads on which it rode. He stated the pivot shaft appeared severely grooved at the points it contacted the two bulkheads.

The technician inspected the right main gear and discovered severe wear on the pivot shaft, and it appeared ready to fail. He also inspected two other like aircraft. One aircraft displayed evidence of wear on both pivot shafts, and the other aircraft displayed cracking and wear on the left main gear.

The submitter recommended all owners, operators, and maintenance personnel be aware of these findings and conduct an inspection of the main gear pivot shaft.

Part total time-1,200 hours.

PIPER

Piper; Model PA28-140 (P28A); Cherokee 140; Broken Brake Line; ATA 3243

During the ground runup, in preparation for an annual inspection, the right brake line blew out at the master cylinder connection point.

Since the date code on the hose was December 1964, the hose was long overdue for replacement to avoid failure.

The submitter states owners will not regularly replace hoses unless there is a mandatory replacement time on all aircraft hoses, and he suggests that manufacturers set the guidelines.

Part total time-3,398 hours.

Piper; Model PA28-181 (P28A); Archer II; Air Filter Seal Deterioration; ATA 7160

The technician conducted an inspection in compliance with Piper Service Bulletin (SB) 1022. The SB addresses "Plastisol" deterioration in induction air filters (P/N 638873).

The technician discovered mold inside the filter element. Further inspection revealed 8 to 12 ounces of water had accumulated in the air box that is formed into the lower cowling.

The submitter stated there may be a design flaw since there is no drain hole in the combination air box and lower cowling which facilitated the removal of moisture in this area.

Part total time not reported.

Piper; Model PA32 (PA32); Cherokee Six; Frayed Trim Cable; ATA 2731

During a routine inspection, the technician discovered the forward trim cable (P/N 62701-42) had frayed at a point where the cable passed through the electric trim servo.

The Piper Service Bulletin (SB) 669 had been complied with by installation of the Piper electric trim pulley alignment kit (P/N 763-971). This kit should align cable to avoid such cable damage. Close inspection revealed the kit does an inadequate job of alignment because it places the entire servo out of alignment which adds to the cable wear. Several similar aircraft in the fleet show similar cable wear due to this misalignment.

The submitter suggested that the manufacturer redesign this kit to avoid further cable deterioration.

Part total time-1,000 hours.

Piper; Model PA32 (PA32); Cherokee Six; Cracked Pawl Plate; ATA 7414

The technician conducted an inspection as required by Airworthiness Directive (AD) 99-04-04 and discovered cracks in the pawl plate of the impulse coupling.

It is difficult to see the cracks under normal inspection practices because they are hidden by the pawls. A technician must remove the pawl springs from the spring-retaining hole in order to rotate the pawl out of the way.

The submitter recommends a thorough inspection of this area during required magneto inspection processes. He also suggested the manufacturer redesign the pawl plate to include a radius rather than a sharp corner.

Part total time-370 hours.

Piper; Model PA32-300 (PA32); Cherokee Six 300; ATA 6113

During a routine inspection, the technician noted a crack extending from the trailing edge of the forward spinner bulkhead to one of the nut plates. The crack continued for another ½ inch forward. This is the second bulkhead installed on this aircraft in less than 8 hours due to the same problem.

The submitter checked the bulkhead mounting and the spinner several times for proper fit and alignment, as well as, proper torque on the spinner mounting screws. Two other aircraft in the same fleet have encountered similar failures.

The submitter stated it appears the bulkhead is not shaped to the spinners and consequently becomes stressed after installing the mounting screws. Almost all of the cracks go through the nut plate rivet holes and continue forward. Apart from the potential danger of flying debris, it has become a costly endeavor for this operator.

Part total time not reported.

Piper; Model PA32-300 (PA32); Saratoga; Gear Handle Problem; ATA 3230

The pilot reported the landing gear handle would not return to the neutral position after takeoff. He recycled the gear, the landing gear extended, and all three gear-down indicators illuminated. However, the gear handle would not return to the neutral position. The pilot made a safe, precautionary landing.

The technician discovered the gear safety circuit breaker failed. He checked the circuit breaker for resistance in the closed position and it was above 70 ohms. This caused the main gear door actuator to stay open which inhibited the handle from returning to the neutral position. He replaced the circuit breaker, tested the system, and returned the aircraft to service without further incident.

Part total time not reported.

Piper; Model PA32RT-300T (P32R); Lance II; Nose Landing Gear Cracks; ATA 3230

While performing an annual inspection, the technician discovered at least seven cracks in the nose landing gear trunnion (P/N 67054-003).

He disassembled the nose gear and discovered several cracks located inside the trunnion. The cracks appeared in multiple locations.

The submitter stated he could not see many of the cracks and the gravity of the damage until he disassembled the gear. He stated fatigue may have led to this failure.

Part total time not reported.

Piper; Model PA38-112 (PA38); Tomahawk; Broken Aileron Rod-End; ATA 2710

While in flight, the left aileron did not respond to the pilot's control input. The pilot made a safe, uneventful landing.

The technician conducted an inspection and discovered the aft rod-end of the left aileron broken. The locknut and bearing end froze as a result of metal oxidation.

The submitter speculates the method of locking the controls with the seatbelt puts the controls in a position that causes moisture to run down the rod to the rod-end. This moisture accelerated the oxidation process.

Part total time not reported.

Piper; Model PA46-310P (PA46); Malibu; Incorrect Nose Gear Part; ATA 3230

During flight, the pilot attempted to extend the gear utilizing the emergency gear extension procedure; however, the nose gear would not extend and lock. The pilot landed the plane by holding the nosewheel off the

ground for as long as possible. The gear finally locked when the plane slowed to approximately 30 knots.

The submitter stated the nose gear emergency extension spring was 2 inches too long; therefore, it was unable to apply enough tension to function properly.

Part total time-2,236 hours.

HELICOPTERS

BELL

Bell; Model 206L3; Jet Ranger; Engine Failure; ATA 7800

The pilot reported that the engine chip detector light illuminated during flight. He made a safe landing and summoned maintenance personnel.

After the technician cleaned the chip detector, he performed a ground run and the chip light illuminated again. He removed and disassembled the engine and discovered the number 1 bearing (P/N 6898607) failed. When the bearing failed, the impeller contacted the shroud.

The submitter speculated stress loading and "heat cycling" caused the bearing failure. He recommended that the manufacturer consider replacing this bearing with a suitable roller bearing.

Part total time not reported.

Bell; Model 412; Defective Wiring; ATA 2400

During a scheduled inspection, the technician discovered many electrical wires in the engine and transmission compartment severely deteriorated.

The yellow-colored electrical wiring insulation cracked, split, and in many places fell off the wires. After separating the wire bundles for further inspection, the technician found the

insulation on these wires had literally disintegrated within the bundles which left bare wires exposed. The submitter speculated someone installed a substandard lot of wire during production of this helicopter.

The submitter recommends that all operators of like aircraft conduct a one-time inspection for this condition.

Part total time-3,369 hours.

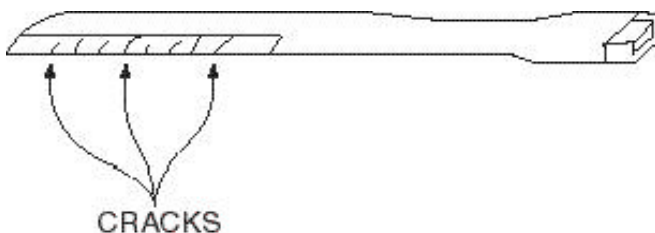
EUROCOPTER

Eurocopter; Model EC135PL; Main Rotor Blade Structural Defects; ATA 6210

While conducting a main rotor blade inspection, the technician thoroughly cleaned the main rotor blade (P/N L621-M1010-054). He discovered eight hair-line cracks on the main rotor blade's leading edge erosion protective strip. (Refer to the following illustration.)

The technician could not see the cracks until he conducted the cleaning process. He recommends cleaning and inspecting the main rotor blades at frequent and regular intervals.

Part total time-783 hours.



Eurocopter; Model AS-350BA; Ecureuil; Fuselage Structural Cracks; ATA 5320

During a 100-hour inspection, the technician found cracks in the fuselage structure.

The cracks originated in the radii of the reinforcement angles (P/N 350A21-1362-27 and -28) at the aft end of the lower fuselage

beam caps. The crack on the left side (with the -27 angle) was approximately 2.25 inches long, and the crack on the right side (with the -28 angle) was approximately 1 inch long. The technician removed the defective parts and sent them to the manufacturer. At this time, the manufacturer has not determined the cause of this defect.

Part total time-5,529 hours.

AMATEUR, EXPERIMENTAL, AND SPORT AIRCRAFT

AVIAT

Aviat; Model S-2B; Pitts Special; Defective Dope Application; ATA 5730

While conducting an inspection, the technician noticed a section of the dope covering did not adhere to the fabric.

On the top wing, approximately 1 inch outboard of the center section and 10 inches aft of the leading edge, the dope covering peeled off in a sheet down to the fabric. The submitter stated this situation occurs when there is no nitrate dope applied to the fabric or when there is contamination of the fabric.

The submitter noted the manufacturer re-covered the wings in 1994 due to other difficulties.

Aircraft total time not reported.

SKYBOLT

Skybolt; Tailwheel Failure; ATA 3250

After landing, the tailwheel failed when it contacted the runway.

An inspection revealed that the tailwheel assembly attachment bolt sheared, the pilot lost steering control, the tailwheel separated from the aircraft, and the rudder contacted the runway. The submitter did not state the type of hardware used to secure the tailwheel.

Part total time not reported.

SWEARINGEN

Swearingen; Model SX300; Landing Gear Failure; ATA 3213

After landing and departing from the runway, the left main landing gear collapsed during a left turn.

An inspection disclosed the left main gear strut (Airight, Inc., P/N 67000-3) outer trunnion flange broke free from its attachment bolt, and the strut rotated forward (clockwise). With this rotation, the actuator's ram threaded rod-end bent and broke free from the self-aligning antifriction rod-end assembly. The strut continued to rotate forward and impacted the fuselage.

The pilot stated this aircraft sustained three unreported hard landings within the past several years. One of the hard landings included a 50-knot crosswind with the outside air temperature at -15 °F. The submitter recommended inspecting the strut frequently at the trunnion attachment points.

Part total time-900 hours.

POWERPLANTS AND PROPELLERS

HARTZELL

Hartzell; Model HC-B3MN-3; Blade Cracks; ATA 6111

This propeller was installed on a Cessna, Model 208B aircraft.

While conducting an inspection in compliance with Hartzell Service Bulletin (SB) 169A, dated November 15, 1991, the technician discovered numerous cracks.

All three propeller blades (P/N M10083) had cordwise cracks which were beyond acceptable limits. All of the cracks led up to and possibly under the leading edge erosion shield. Due to this damage, the technician removed the propeller from service.

The submitter cautions all operators to comply with SB 169A and give close attention to the propeller blades during normal inspections.

Part total time-5,378 hours.

McCAULEY

McCauley; Model 4JFR34C; Oil Leak; ATA 6110

This propeller was installed on a Beech, Model 200, King Air aircraft.

A technician removed the propeller because of an oil leak and sent it to a propeller repair station. The repair station determined the oil leak came from the "beta rod" (P/N C5648-1) area. An investigation revealed the "beta rod" had broken at the start of the threaded portion of the rod. The cause of the broken "beta rod" was not determined.

Part total time-520 hours.

PRATT & WHITNEY

Pratt & Whitney; Model R1340; Metal in the Engine Oil; ATA 8530

During flight, the engine oil chip detector light illuminated. The pilot made a safe landing and took the aircraft to the hangar for maintenance.

The technician removed the engine oil filter and discovered a large amount of aluminum inside the element. Further investigation disclosed the aluminum came from the number 5 piston, piston pin, and the cracked piston skirt. The cylinders on this engine had undergone the "Cericrome" process. No cause for this defect was given.

Part time since overhaul-271 hours and the estimated total time-5,178 hours.

TELEDYNE CONTINENTAL

Teledyne Continental; Model TSIO360EB; Bearing Failure; ATA 8520

While completing a "top overhaul," the technician detected metal in the crankcase sump.

By using a magnetic retrieval tool, he removed a piece of metal approximately .87 by .21 by .1 inch from the crankcase. An investigation disclosed the number 3 main bearing (P/N SA 642337) had dislodged and become loose in the crankcase. After he disassembled the engine, he discovered the number 2 main bearing was also working and becoming loose. The through-bolt torque had been checked 300 operating hours prior to this inspection and was found below limits. The submitter assumed the low through-bolt torque caused the bearing failure.

Part total time-1,318 hours.

ACCESSORIES

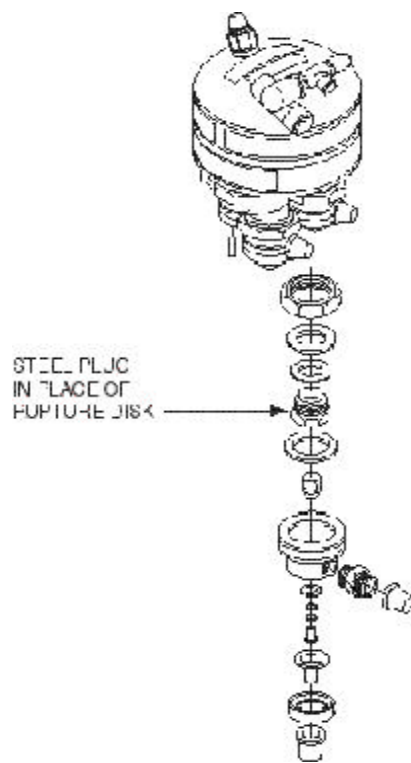
AVIATION FIRE EXTINGUISHERS

Aviation Fire Extinguishers; ATA 2622

An aircraft owner delivered a HALON fire extinguisher (KIDDE DEXAERO P/N 111.1555.324-12A) to an FAA-certificated repair station for a hydrostatic test and overhaul.

After a receiving inspection, the unit was routed to the production department for accomplishment of the necessary work. The unit was found to be full of extinguishing agent and was purged. While disassembling the fire extinguisher, the technician noticed that the "yellow" outlet rupture disk had been fired even though the cylinder was full when it was received. Further disassembly disclosed that a "steel plug," used for pressure testing, had not been replaced with the rupture disk prior to final assembly. (Refer to the following illustration.) After contacting the owner and discussing the discrepancies, it was speculated that the "steel plug" had been overlooked during a previous overhaul at another shop.

Many times, emergency equipment is neglected or not given proper care. It sits in its installed position for long periods of time and is not noticed until it is needed. When needed, this equipment **MUST** work. In fact, your life may depend on the proper operation of this equipment.

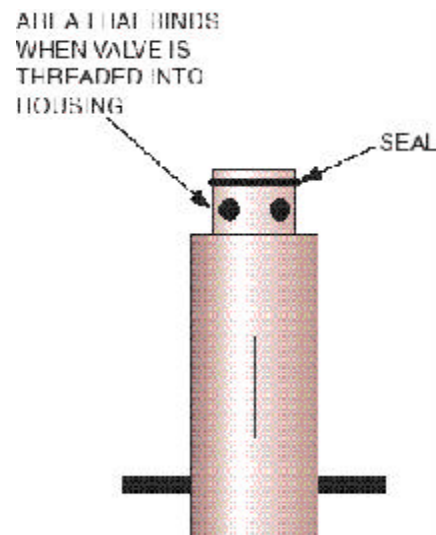


FUEL DRAIN VALVES

After the submitter installed a new fuel drain valve (Curtis P/N CCA1550) in an aircraft, it would not open.

It appeared the shaft was binding on the housing in the area just below the seal. (Refer to the following illustration.) The submitter used a 10-power magnifying glass to view the affected area. The drain valve package indicated the manufacturer produced the drain valve in the fourth quarter of 1998. The submitter did not offer any other details concerning this problem.

Part total time-0 hours.



AIR NOTES

THE BEST TEACHER

We received a message from an Airframe & Powerplant (A&P) mechanic with an Inspection Authorization (IA). He made an excellent point which is the subject of this article.

The A&P mechanics tend to operate normally in almost all modes of operation, oil changes, careful inspections, troubleshooting, etc. However, most mechanics tend to go into some sort of "lazy" mode when it comes to passing on valuable information on paper. The cure? Unknown. Perhaps the utilization of hindsight to remember some of those tricky problems that occurred in every A&P's past that were cured after much aggravation.

The application of this hindsight might yield a positive attitude toward helping out the next person with the same problem.

Experience is definitely the best teacher. The school of hard knocks (SHK) provides knowledge while producing bleeding knuckles, scars, and sometimes a bad attitude. However, in our profession it is imperative that we maintain an open mind when presented with new information or a new approach to an old problem. If you are a young mechanic, be open to advice from more experienced mechanics who have scars from the SHK to prove their mettle. Likewise, more experienced mechanics (you will notice that I avoided the use of "younger" and "older") may learn some new tricks from the less experienced mechanics if we will just keep an open mind and suppress the urge to discount the information as coming from a "punk kid."

Experience, like knowledge, comes in many forms, and it is sometimes disguised as a "punk kid," an "old XXXX," or in another form. The SHK can provide an excellent education and a robust respect for the product of our labor; however, the sharing of experience and knowledge can prevent gain from "trial and error." Trial and error can degrade aviation safety and is not conducive to a good work environment.

As the technology of our profession is in a constant state of flux, we must be zealous in our pursuit of knowledge and be willing to share what we have gained with fellow mechanics.

CHANGES TO THIS PUBLICATION

We have created a new Internet web site which includes an electronic version of FAA Form 8010-4, Malfunction or Defect

(M or D) Report. You may use the electronic version to send M or D reports to us. The web site also includes a search function for older copies of the Alerts. The address for this web site is:

<http://www.mmac.jccbi.gov/alerts/>

SUBSCRIPTION FORM

Many of our readers voiced their concern when, due to a budget reduction, it was necessary to stop printing and distributing paper copies free of charge.

The Government Printing Office (GPO) agreed to print and distribute the Alerts. However, there will be a 1-year subscription charge for this service. The charge will be \$25 per year for domestic mailings and \$31.25 per year for foreign mailings.

The mailing list for the Alerts is current, and we sent a subscription form to all past recipients. However, if you did not receive a subscription form, we have included one in this publication.

IF YOU WANT TO CONTACT US

If you want to contact the staff of this publication we welcome your comments, suggestions, and questions. Also, you may use any of the following means of communication to submit reports concerning aviation-related occurrences.

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You can access current and back issues of this publication from the internet at:

<http://www.mmac.jccbi.gov/alerts>

This web site also has view, search, E-Mail, and M or D submit functions.

The "Fedworld" web site at:

<http://www.fedworld.gov/pub/aa-asi/aa-asi.htm>

The "Fedworld" web site has approximately 5 years of back issues listed. The files are titled using eight characters. The first three characters are ALT. The second three characters indicate the month (Jan, Feb, etc.). The last two characters indicate the year (98, 99, etc.). The more recent files are in Adobe Acrobat (PDF) format and can be viewed and downloaded. To download individual monthly files, point the mouse pointer at the desired file, and click the right mouse button. This will produce a drop-down menu. Select "save target as" from the drop-down menu. Select a location for the downloaded files to reside. You can print the downloaded file(s). NOTE: The Service Difficulty Report (SDR) files are at the end of the ALT files.

AIRWORTHINESS DIRECTIVES (AD's) ISSUED IN JUNE 1999

99-12-02; Raytheon (Beech); 45 (YT-34), A45 (T-34A, B-45), and D45 (T-34B)

99-12-05; Piper, The New; PA-31, PA-31-300, and PA-31-325, PA-31-350, PA-31P-350

99-12-06; AlliedSignal; Appliance: VN 411B Very High Frequency (VHF) Navigation Receivers

99-12-07; Raytheon (Beech); 1900D

99-13-02; Eurocopter France; Rotorcraft: AS332C, L, L1, and L2

99-13-03; Bell Helicopter; Rotorcraft: 206L-4

99-13-04; Cessna; 206H and T206H

99-13-09; McDonnell Douglas Helicopters; Rotorcraft: 369D and E

95-11-15 R1; Schleicher, Alexander; Glider: ASK 21

97-21-01 R1; MT-Propeller; Entwicklung; Propeller: MTV-3-B-C/L250-21

98-25-13; McCauley Accessory Division; Propeller: 2A36C23/84B-0 and 2A36C82/84B-2

99-11-04; Sikorsky; Rotorcraft: S-76A

99-12-01; Eurocopter Deutschland; Rotorcraft: EC135

99-13-10; Bell Helicopter; Rotorcraft: 206L-4

99-13-11; Robinson; Rotorcraft: R44

99-13-12; Bell Helicopter; Rotorcraft: 206L, 206L-1, 206L-3, 206L-4; 99-14-01; Piper, The New; PA-23, PA-23-160, PA-23-235, PA-23-250, PA-E23-250, PA-30, PA-39, PA-40, PA-31, PA-31-300, PA-31-325, PA-31-350, PA-31P, PA-31T, PA-31T1, PA-31T2, PA-31P-350, PA-34-200, PA-34-200T, PA-34-220T, PA-42, PA-42-720, and PA-42-1000

99-14-02; LET Aeronautical Works; Sailplane: L33 SOLO

99-14-03; Pilatus; PC-12 and PC-12/45

GENERAL AVIATION SERVICE DIFFICULTY REPORTS FOR JUNE 1999

The following are abbreviated reports submitted between June 1, 1999, and July 20, 1999, which have been entered into the FAA Service Difficulty Reporting (SDR) System data base. This is not an all inclusive listing of Service Difficulty Reports. The full SDR reports can be found on the Internet at: <<http://www.fedworld.gov/pub/faa-asi/faa-asi.htm>>. This Internet address takes you to the FAA ASI Library and the SDR reports are listed by weekly entries. This data base is maintained by the Aviation Data Systems Branch, AFS-620, located in Oklahoma City, Oklahoma. **These reports contain raw data that has not been edited; however, if you require further details, please contact AFS-620 at the following address.**

FAA
Aviation Data Systems Branch, AFS-620
P.O. Box 25082
Oklahoma City, OK 73125

FEDERAL AVIATION ADMINISTRATION Service Difficulty Report Data

Sorted by Aircraft Make and Model then Engine Make and Model

This report derives from unverified information submitted by the Aviation Community without FAA review for accuracy

ACFT MAKE	ENG MAKE	COMP MAKE	PART NAME	PART CONDITION	DIFF-DATE	T TIME
ACFT MODEL	ENG MODEL	COMP MODEL	PART NUMBER	PART LOCATION	FAA REPORT NO.	TSO
REMARKS						
		GRIMES	BATTERY	MISMANUFACTURE	06/22/1999	
		60030451	AD4002P	CABIN		
						1999070900522
FAA-PMA REPLACEMENT CELL IS PHYSICALLY SHORTER THAN ORIGINAL COMPONENT MANUFACTURER'S CELL. (ORIGINAL CELL, P/N 41B004AD07G3). IN ADDITION, THE POSITIVE (TIP) TERMINAL IS OF LARGER DIAMETER THAN ORIGINAL COMPONENT MANUFACTURER'S BATTERY CELL. THESE 2 DISCREPANCIES COMBINE TO CREATE A LOSS OF BATTERY OUTPUT CAUSED BY LACK OF PROPER CONTACT WITH EMERGENCY POWER SUPPLY BATTERY TERMINALS. DEFECT FOUND AT TIME OF INSTALLATION OF REPLACEMENT CELLS.						
	ALLSN		SEAL	PITTED	06/01/1999	
	250C20B	23038160	6898764	TURBINE	1999062500543	
ENGINE DISASSEMBLED DUE TO LOW POWER ON TEST CELL. UPON INSPECTION OF TURBINE PARTS NOTED: PITS BEYOND SERVICEABLE LIMITS ON CARBON SEAL MATING SURFACE.						
	GARRTT	WOODWARD	DIAPHRAGM	DEFECTIVE	06/11/1999	31
	TPE331*		1390136	FCU	1999070900010	
FUEL CONTROL UNIT RETURNED WITH COMPLAINT OF 'LACK OF POWER LEVER RESPONSE AT ALTITUDE'. AS RECEIVED, REVEALED HOLE INSIDE OF DIAPHRAGM. CAUSE UNKNOWN.						
	LYC		CYLINDER	CRACKED	06/18/1999	
	O235H2C		05K21232	ENGINE	1999070900133	
(AUS) NR 3 CYLINDER CRACKED AROUND THE CIRCUMFERENCE OF THE CYLINDER BASE.						
	AMTR		ENCODER	MALFUNCTIONED	06/14/1999	
	HARMONRCKTII	202	202	ALTIMETER	1999070200267	

ATC REPORTED ENCODER WAS INACCURATE. REMOVED ENCODER AND SENT TO MANUFACTURER FOR REPAIRS. RECEIVED, RE-INSTALLED, AND PERFORMED CORRELATION TEST IAW FAR 91:413. ENCODER IS NOW REPORTING

AMTR	PINTLE	CRACKED	06/04/1999
SPITFIRE	33050239	MLG	1999070900090
(AUS) MAIN LANDING GEAR PINTLE CRACKED. PART WAS A USED ITEM AND WAS BEING NDT INSPECTED BEFORE			

AMTRCZ	SPRING	BROKEN	06/12/1999
COZY		POWER LEVER	1999070900135
(AUS) THROTTLE OPERATING (RETURN) SPRING BROKEN.			

BBAVIA	AIR FILTER	ALTERED	06/22/1999
7AC	2849	INTAKE	1999071600013
DURING ANNUAL INSPECTION, THE ORIGINAL AIR FILTER ASSEMBLY WAS FOUND TO HAVE HAD THE GUTS REMOVED AND ALTERED TO ACCEPT A BRACKET AIR FILTER ELEMENT BA-4106 WHICH WAS CUT TO SIZE. THIS IS NOT APPROVED AND NOT SAFE. AIRCRAFT TT: 2,385.0 HOURS.			

BBAVIA	ELT	INOPERATIVE	06/25/1999
7AC	3000	CABIN	1999071600012
DURING ANNUAL INSPECTION AND C/W FAR 91.207(D) G-TEST FAILED WHILE IN THE ARM POSITION. UNIT WAS OPENED AND SEVERAL LOOSE PARTS WERE FOUND FLOATING AROUND. AIRCRAFT TOTAL TIME: 2,382:7 HOURS.			

BEECH	PWA	SHOCK	CRACKED	06/08/1999
200BEECH	PT6A42	1018200741	NLG	1999070900124 16
(AUS) NOSE LANDING GEAR SHOCK ABSORBER CRACKED. FOUND DURING INSPECTION IAW AD/BEECH200/45				

AMDT2

BEECH	WIRE	SHORTED	06/08/1999	1277
400A	G102A22	MLG	1999071600338	
PILOT REPORTS 2 AMP LANDING GEAR CIRCUIT BREAKER TRIPS WHEN GEAR SELECTED UP. MAINTENANCE FOUND TWO WIRES FROM GEAR SELECTOR CONTROL SWITCH CRUSHED AND SHORTED TOGETHER BETWEEN EFIS TUBE NR 3 AND CENTER PEDESTAL STRUCTURE. REPAIRED WIRES AND REPOSITIONED WIRE BUNDLE TO CLEAR STRUCTURE. PERFORMED NORMAL GEAR RETRACTION CHECK. NO DEFECTS NOTED.				

BEECH	ACK	BATTERY	LEAKING	06/03/1999
58	E01	MN1300	ELT	1999070900075
(AUS) ELT BATTERY LEAKING CAUSING CORROSION ON THE BATTERY CASE. THE BATTERY WAS LEAKING ALONG A DETERIORATED 'POWER CHECK STRIP' P. THE BATTERIES WERE FITTED ON THE 15TH SEPTEMBER 1998 WITH A BEST IF INSTALLED BEFORE JANUARY 2002 DATE.				

BEECH	CONT	BOLT	BROKEN	06/10/1999
58	IO520C	96910023	ENGINE MOUNT	1999070900123
(AUS) ENGINE MOUNT BOLT BROKEN.				

BEECH		TIRE	FAILED	06/01/1999
58P	505C661	GOODYEARAER	MLG	1999061800162
TREAD SEPARATING, SPLITTING, AND BUMPS AT TOP OF SIDE WALL.				

BEECH		LINE	WORN	06/07/1999	3368
95B55			RT WING	1999070200020	
RIGHT WING BOOT DE-ICE LINE RUBBED/MELTED THROUGH BECAUSE OF CONTACT WITH PNEUMATIC OUTPUT LINE FROM RIGHT ENGINE PUMP. VERY DIFFICULT TO INSPECT.					

BEECH	CONT	EXHAUST PIPE	CRACKED	06/02/1999	2372
A36	IO550B	K359500051	NR 4 CYLINDER	1999070200007	
DURING AN ANNUAL INSPECTION, A CRACK WAS FOUND ON THE LEFT OUTBOARD EXHAUST PIPE AT NR 4 CYLINDER. THE CRACK SEEMS TO BE ABOUT 1.25 INCHES LONG. PILOT NOTICED NO ADVERSE EFFECTS. EXHAUST PIPE WAS REPLACED AND NO OTHER DAMAGE FOUND.					

BEECH		WIRE	FAILED	06/01/1999	10007
B90		P83A2	COCKPIT	1999070900016	

AFTER RUNNING THE AIR CONDITIONER DURING A PHSE INSPECTION, SMOKE WAS SEEN AND ODOR WAS DETECTED IN THE COCKPIT. FOUND WIRE PB3A2 SMOULDERING UNDER THE CENTER PEDESTAL AT THE ISOLATION LIMITER BUS. WIRES P83A2 AND P83B2 ARE ALUMINUM WIRES RUNNING FROM THE STARTER RELAY BUS IN THE RIGHT WING TO THE ISOLATION LIMITERS IN THE COCKPIT. THEY PROVIDE POWER TO THE ENTIRE AIRCRAFT EXCEPT FOR THE EMERGENCY BUS AND ARE UNPROTECTED WIRES. THE ALUMINUM WIRING HAS CORRODED AND OVERHEATED, AND FAILED OVER TIME. WHILE REMOVING WIRE P83A2, FOR REPLACEMENT WIRE P83B2, IT SIMPLY SNAPPED AT THE STARTER RELAY. WIRE WAS SEVERELY CORRODED AND THE INSULATION ALSO SHOWED OVERHEATING.

BEECH	SPAR	CORRODED	06/16/1999	4137
E55	951100224	RT WING	1999070200022	

FOUND AFT UPPER SPAR CAP ON RIGHT WING TO BE EXFOLIATED AND CORRODED AT WS 70.340. AFFECTED AREA IS APPROXIMATELY 6-8 INCHES IN LENGTH. OUTBOARD END OF CORRODED AREA SEVERELY BLISTERED AND DISINTEGRATED THROUGH ENTIRE THICKNESS OF SPAR CAP EXTRUSION.

BELL	LINE	DAMAGED	06/07/1999	9
206B	70010H00012180	HYDRAULIC		

1999062500397

DURING IN-FLIGHT, PILOT NOTICED LOSS OF HYDRAULIC SYSTEMS. PILOT MADE A PRECAUTIONARY LANDING. AIRCRAFT INSPECTED, FOUND THE HYDRAULIC PRESSURE LINE WAS DEFECTIVE ONLY 9.0 HOURS SINCE INSTALLED. REMOVED AND REPLACED HYDRAULIC LINE AND PERFORMED GROUND RUN AND OPERATION AND LEAK CHECK. NO DEFECTS FOUND. AIRCRAFT RETURNED TO SERVICE.

BELL	STARTER	FAILED	06/10/1999	3004
206B	23032027	START/GENERATOR	1999070900537	

SUSPECT BEARING FAILURE. STARTER MAKES UNUSUAL NOISE AND WILL NOT SPIN ENGINE FAST ENOUGH TO START. BEARINGS WERE REPLACED 611.9 HOURS PREVIOUSLY AT OVERHAUL.

BELL	COMMUTATOR	WORN	06/25/1999	
206B3	23032023	START/GENERATOR	1999071600347	498

COMMUTATOR ON ARMATURE GROUND BEYOND LIMITS. REMOVED AND REPLACED.

BELL	BLADE	DISBONDED	06/10/1999	1622
212	2020155010	2120155015	MAIN ROTOR	1999070200342

DURING DAILY INSPECTION, FOUND VOID AT UPPER AND LOWER SECTION OF TRIM TAB TRAILING EDGE. AIRCRAFT TT: 4,967.8 HOURS. M/R BLADE REMOVED AND SENT FOR REPAIR.

BELL	TRANSPONDER	MALFUNCTIONED	06/09/1999	
214ST	214074152101	AIRSPEED	1999062500641	

AIRSPEED TRANSCIEVER CAUSES ELEVATION SYSTEM TO DROP OFFLINE IN-FLIGHT.

BELL	STUD	CRACKED	06/09/1999	2496
407	407010105101	DROOP STOP	1999062500639	

DROOP STOP REMOVED DURING OVERHAUL AND NDT PROCEDURE. CRACKS WERE FOUND.

BELL	ADAPTER	CRACKED	06/09/1999	2496
407	406010107105	MAIN ROTOR	1999062500640	

REMOVED DURING OVERHAUL AND NDT PROCEDURE. CRACKS WERE FOUND. SERIAL NUMBERS REMOVED ARE A2855, A2844, A2882, AND A2884. REPLACEMENT PART SERIAL NUMBERS ARE A3311, A3592, A3615, AND A3591.

BELL	PANEL	CRACKED	07/08/1999	
407	407070620137	PASSENGER DOOR	1999071600152	

DOOR CRACKED. REFERENCE: DMR NR 686168.

BELL	ACTUATOR	MALFUNCTIONED	06/18/1999	
412	212075418105	STEP	1999062500646	

STEP ACTUATOR IN THE EXTENDED POSITION, MOTOR WILL NOT RETRACT WITH A CORD ON IT, INTERMITTENT.

BELL	SKID TUBE	DENTED	06/10/1999	
UH1H	412220116	RT SKID	1999070200344	

SKID TUBE DENTED. REMOVED AND REPLACED.

BNORM	LYC		SPAR	CRACKED	06/02/1999	
BN2A20	IO540K1B5		BN2A20	WING	1999070900077	
(AUS) WING MAIN SPAR CRACKED IN TWO PLACES ON THE LT SIDE AND IN THREE PLACES ON THE RT SIDE IN THE AREA COVERED BY AD/BN2/62 AND SB BN2/SB237. THE AIRCRAFT STILL HAD 111 CYCLES TO RUN BEFORE THE NEXT AD INSPECTION WAS DUE.						
BOLKMS	LYC		O-RING	LEAKING	06/03/1999	569
BK117A3	LTS101650B1	430109902	M8324811904	T1 SENSOR	1999071600001	
TROUBLESHOT SYSTEM PER ENGINE MM. FOUND AIR LEAK ON TEMP COMPENSATOR. REMOVED 5 O-RINGS, PN M8324811-904. INSTALLED 5 NEW O-RINGS, P/N SAME. PERFORMED 7 GROUND RUNS ON NR 1 ENGINE. PERFORMED MAXIMUM CONTINUOUS OE 1 ON NR 1 ENGINE. TOPPED NR 1 PER ACFT TECH REP. ALL TEST RUNS AND FLIGHTS						
BOLKMS			SHAFT	MISMANUFACTURE	06/04/1999	
BO105S			E23037413	FUSELAGE	1999070200085	
NEW OUTER SHAFT ISSUED TO AIRCRAFT,BUT COULD NOT BE INSTALLED BECAUSE OF UNDERSIZE NR 5 BEARING						
BOLKMS	ALLSN		NOZZLE SHIELD	CRACKED	06/01/1999	984
BO105S	250C20B	6898735	23062750	NR 1 TURBINE	1999062500542	
ENGINE REMOVED DUE TO SMOKE ON SHUTDOWN. UPON INSPECTION OF TURBINE PARTS NOTED: CRACKED BEYOND SERVICEABLE LIMITS ON NR 1 NOZZLE SHIELD DOME AS MARKED.						
BOLKMS	ALLSN		SEAL	MISMANUFACTURE	06/14/1999	
BO105S	250C20B		E68777362	LABRINTH	1999070200087	
NEW LABYRINTH SEAL THAT COULD NOT BE INSTALLED ON AIRCRAFT DUE TO PILOT DIAMETER OVERSIZED.						
BOLKMS	ALLSN		PTO GEAR	SPALLED	06/15/1999	
BO105S	250C20B		6899402	GEARBOX	1999070200089	
PTO GEAR REMOVED FROM AIRCRAFT DUE TO SPALLING ON GEAR TEETH.						
BOLKMS	ALLSN		WHEEL	DAMAGED	06/15/1999	
BO105S	250C20B		6853279	NR 4 TURBINE	1999062500544	
UPON ASSEMBLY OF F. ROTOR; UNABLE TO OBTAIN BALANCE. REPLACEMENT OF NR 4 TURBINE WHEEL CURED PROBLEM. INSTALLED NEWWHEEL.						
CASA		CASA	VALVE	LEAKING	06/09/1999	171
C212CC			CA248003	NLG STEERING	1999061000013	
(CAN) NOSE WHEEL STEERING OBSERVED TO BE OPERATING 45 DEGREES RIGHT AND 30 DEGREES LEFT. WHERE PILOT VALVE GOES THROUGH THE PRE-SELECTOR VALVE CASING THERE WAS GREASE COMING OUT. VALVE REPLACED.						
CESSNA	LYC	SLICK	DIST BLOCK	WORN	06/08/1999	551
152	O235L2C	4381	K3822	RT MAGNETO	1999062500403	
DURING ROUTINE 500-HOUR INSPECTION OF BOTH MAGNETOS, OILITE BUSHING IN BOTH LT AND RT DISTRIBUTOR BLOCKS WERE FOUND WORN EXCESSIVELY. REPLACED WITH NEW K3822 DISTRIBUTOR BLOCK AND GEAR ASSEMBLIES. DUE TO LOW TIME ON MAGNETOS, SUBMITTER SUGGESTED POSSIBLE CAUSE OF BUSHING FAILURE MAY BE IMPROPER LUBRICATION IN OILITE BUSHING WHEN INSTALLED AT FACTORY.						
CESSNA			WIRE	CORRODED	06/01/1999	
172				BATTERY	1999071600357	
NO CHARGING INDICATION. FOUND BATTERY WIRE TO BUS BAR FROM REGULATOR PREVIOUSLY SPLICED. SPLICE HEATED, CORRODED CAUSING LARGE RESISTANCE. NOTED POWER TO REGULATOR WHEN STATIC ON THIS WIRE WHEN RUNNING POWER, WOULD NOT RETURN THROUGH THIS WIRE TO BUS. WIRE ORIGINAL, SPLICED?						
CESSNA	LYC		PUSHROD	BROKEN	06/07/1999	
172N	O320H2AD		LW15315	NR 2 CYLINDER	1999070200010	2145
AIRCRAFT STARTED RUNNING ROUGH AND LOST POWER. A LANDING WAS MADE WITH MINOR DAMAGE TO AIRCRAFT (RT WHEEL FAIRING). UPON INSPECTION, FOUND NR 2 CYLINDER EXHAUST PUSHROD BROKEN AND INTAKE PUSHROD BENT. (PUSHROD TUBES ALSO BENT). SUBMITTER SUSPECTED EXHAUST ROD BREAKING CAUSED INTAKE PUSHROD TO BEND. SUSPECT MOMENTARY EXHAUST VALVE STICKING CLOSED CAUSEDALL OF THIS. SUBMITTER RECOMMENDED CHECKING/CLEANING EXHAUST VALVE GUIDE PERIODICALLY TO PREVENT						
CESSNA			FUEL TANK	CONTAMINATED	06/10/1999	

172P		WING	1999070200004
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ACFT MADE 4 FORCED LANDINGS INCLUDING 1 OFF-AIRPORT, NO DAMAGE. LANDINGS DUE TO ENG STOPPAGE. CARB ICE SUSPECTED AS ENG WOULD FIRE UP ON THE GROUND. AFTER OFF-AIRPORT LANDING, ACFT TAXIED FOR TAKEOFF WHEN ENG QUIT. WINGS WERE SUMPED AND APPROX 20 OUNCES OF WATER WAS PRESENT. ACFT FLOWN OUT TO HOME FIELD. IN HANGAR, DYE WATER INTRODUCED INTO TOP OF LT WING THRU ACCESS PANELS. 14 OUNCES OF WATER WAS PUT INTO TANK WITH ONLY 6 OUNCES DRAINING OUT OF SUMP AFTER ROCKING WINGS. THIS IS A ONE-OWNER ACFT WITH NO REPAIRS MADE TO FUEL BAY AREA. ACFT HAS BEEN FITTED WITH 4 ADD'L RETROFIT SUMPS IN EACH WING. DURING EXPERIMENT, DRAINED NO WATER FROM ANY OF RETROFIT SUMPS.

CESSNA	LYC	CARBURETOR	MALFUNCTIONED	06/03/1999	289
172P	O320D2J	MA4SPA	ENGINE	1999062600034	

ENGINE WOULD NOT SHUT OFF WITH MIXTURE CONTROL. FOUND CARBURETOR BOWL LOOSE, BUT MOUNTING BOLTS STILL HAD LOCK TABS INPLACE. BOLTS APPEARED TO BE LOOSE IN THREADS IN BOWL. NEED TO HAVE A LOOK AT PAM MANUFACTURING PROCEDURES.

CESSNA		FIREWALL	CRACKED	06/25/1999	293
172R		05530313	FUSELAGE	1999071600006	

C/W CESSNA SB 98-53-02. FOUND FIREWALL CRACKED AT LOWER COWLING MOUNT BRACKET ADJACENT TO BATTERY BOX. CRACK EXTENDED THROUGH INNER BRACKET RIVET HOLES APPROXIMATELY 1 INCH TO 2 INCHES IN LENGTH. ALSO, FOUND LOWER COWL SHOCK MOUNTS, P/NJ7444-36 TORN. SUBMITTER STATED THIS AIRCRAFT SERIAL NUMBER DOES NOT FALL IN THE EFFECTIVITY RANGE OF THE SERVICE BULLETIN STATED ABOVE.

CESSNA		ALTIMETER	FAILED	06/25/1999	17
172R		5934P3	COCKPIT	1999071600017	

ALTIMETER MANUFACTURED BY UNITED INSTRUMENTS, INC., ALTIMETER FAILED AFTER EFFECT REQUIREMENTS FOR BI-ANNUAL CERTIFICATION WHEN ONLY 20.7 HOURS TOTAL TIME.

CESSNA	LYC	CYLINDER	CRACKED	06/11/1999	
177B	O360A1F6		NR 2	1999062500351	

NR 2 CYLINDER DEVELOPED AN OIL LEAK DIAGNOSED AS A CRACK THROUGH THE CYLINDER CASTING IN THE AREA OF THE INTAKE VALVE SEAT. UPON REMOVING THE CYLINDER FOR EXCHANGE UNDER WARRANTY, THE EXHAUST AND INTAKE ROCKER ARMS WERE DISCOVERED SWAPPED AS DELIVERED FROM THE FACTORY. THE OTHER 3 CYLINDERS WERE CHECKED, AND THE ROCKER ARMS WERE IN THE CORRECT PLACES ON THOSE CYLINDERS.

CESSNA		TUBE	MALFUNCTION	06/07/1999	4893
177RG		20500111	ENGINE SUMP	1999062500385	

AFTER 15 MINUTES FLIGHT TIME OF 1ST FLT AFTER ANNUAL, PILOT NOTICED PROP OVERSPEEDING AND ENG OIL PRESS DROPPING TO ZERO. PILOT ACCOMPLISHED SUCCESSFUL PARTIAL POWER, DOWNWIND, EMERG LANDING. ENG STOPPED WHEN ACFT HAD CLEARED RUNWAY. ENG COMPT AND BELLY COVERED WITH OIL, NO OIL SHOWN ON THE DIPSTICK. NO LEAKS FOUND. DRAIN VALVE FUNCTIONED PROPERLY. WHILE CHECKING OIL QUICK DRAIN, NOTED ATTACHED OIL DRAIN TUBE, PN 2050011-1, HAD A DENT ON LOWER END AND THE NOSE GEAR TRUNNION HAD FRESHLY CHIPPED PAINT ON UPPER LT PORTION. OIL DRAIN TUBE BECAME LOOSE UNDER VIBRATION AND AIR LOAD, FOULED NOSE GEAR TRUNNION. WITH NOSE GEAR FULLY RETRACTED, OIL QUICK DRAIN FORCED OPEN ALLOWING

CESSNA	CONT	COUNTERWEIGHT	LOOSE	06/07/1999	169
182P	IO550F		CRANKSHAFT	1999070200266	

DURING START-UP OF THE ENGINE, THE NR 1 CYLINDER TRAILING COUNTER WEIGHT ON THE CRANKSHAFT CAME LOOSE FROM CRANKSHAFT AND MADE A HOLE IN THE TOP OF THE CASE. CSB99-3A HAD BEEN COMPLETED 1.7 HOURS PRIOR. REASON FOR FAILURE UNKNOWN AT THIS TIME.

CESSNA		HOSE	DETERIORATED	06/21/1999	
182R			VACUUM SYSTEM	1999071600337	

ALL VACUUM HOSES INSTALLED IN THIS AIRCRAFT HAVE HEAVY DETERIORATION BOTH INSIDE AND OUTSIDE OF THE HOSE. THE ONLY INDICATION OF A PROBLEM WAS A DROP IN THE VACUUM GAUGE PRESSURE WITH THE AIRCRAFT IN-FLIGHT. THIS AIRCRAFT HAS HAD TWO PREVIOUS VACUUM PUMPS INSTALLED ALONG WITH GYRO INSTRUMENTS REPLACED. THIS WAS IN 1989 AND 1990. (2,547 AND 2,582 HOURS TT). TOTAL TIME IN SERVICE AT THIS EVENT IS 4,273.9 TACH HOURS. THESE HOSES APPEAR TO HAVE BEEN INSTALLED AT THE FACTORY.

CESSNA	FACET	PUMP	INOPERATIVE	06/26/1999	
310G		C2915060101	FUEL TIP TANK	1999071600358	

DISCREPANCY FROM PILOT. RIGHT TRANSFER PUMP INOPERATIVE. DURING INSPECTION, NOTED FUEL PUMP AND ASSOCIATED WIRING DAMAGED DUE TO EXTREME HEAT OF FUEL PUMP OPERATION. INSPECTED ALL WIRING AND ELECTRICAL CIRCUIT WITH NO DEFECTS NOTED. PART TOTAL TIME 357 HOURS. THIS HAS BEEN THE THIRD PUMP INSTALLED WITHIN 2 YEARS WITH FAILURES OCCURRING WITHIN 400 HOURS. CESSNA HAS BEEN INFORMED

CESSNA	FACET	PUMP	SHORTED	06/28/1999	132
310R		476411	FUEL SYSTEM	1999071600020	

PILOT NOTED THE RIGHT LANDING LIGHT CIRCUIT BREAKER TRIPPED. PILOT RESET BREAKER AND IT TRIPPED AGAIN. INVESTIGATION REVEALED THE RIGHT MAIN FUEL TRANSFER PUMP WAS SHORTING THIS CIRCUIT. (NOTE: BOTH THE LANDING LIGHT AND TRANSFER PUMP ARE ON THE SAME CIRCUIT). THIS PUMP SHOWS SIGNS OF ARCING AND BURN MARKS AT THE POINT THE SHIELDED POWER WIRE ENTERS THE PUMP.

CESSNA	CONT	DRIVE GEAR	WORN	06/10/1999	
340A	TSIO520NB	632018	ENGINE	1999070200273	123

DURING ROUTINE MAINTENANCE, A METALLIC CLUNK WAS DETECTED WHILE ROCKING THE PROPELLER. FURTHER INVESTIGATION REQUIRED REMOVAL OF THE ALTERNATOR. NOISE DID NOT EXIST WITH ALTERNATOR REMOVED. VISUAL INSPECTION OF THE RING GEAR ON THE CRANKSHAFT SHOWED IRREGULAR WEAR PATTERN. BACKLASH CHECK OF GEAR SHOWED .038 INCH BACKLASH. TCM MAXIMUM SERVICEABLE LIMIT, 15.012 INCH.

CESSNA	GARRTT	FUEL CONTROL	MALFUNCTIONED	06/01/1999	5533
441	TPE3318	89711014	RT ENGINE	1999070900009	

MANUAL MODE SOLENOID VALVE FAILED CAUSING AN UNCOMMANDED FUEL FLOW INCREASE TO THE RIGHT ENGINE. THE RESULTANT TORQUE INCREASE CAUSED THE AIRCRAFT TO VEER SLIGHTLY.

CESSNA	GARRTT	MOUNT	CRACKED	06/10/1999	
441	TPE3318	57510088	LT ENGINE	1999070900129	

(AUS) LT ENGINE MOUNT ASSEMBLY CRACKED.

CESSNA	HYDROAIRE	VALVE	MALFUNCTIONED	06/02/1999	
550	385814	385814	BRAKE	1999062500358	142

THE ANTI-SKID SERVO VALVE WIRES (POSITIVE AND NEGATIVE) WERE CROSSED ON THE REPLACEMENT OF THE POWER BRAKE VALVE. THIS PREVENTED THE ANTI-SKID SYSTEM FROM ACTUATING THE VALVE TO UNLOAD THE BRAKE HYDRAULIC PRESSURE WHEN A SKID OCCURRED ON LANDING RESULTING IN A FLAT TIRE. THE ANTI-SKID SYSTEM DOES NOT MONITOR THIS VALVE CONDITION, THEREFORE, IT DID NOT PROVIDE A WARNING ANNUNCIATION TO THE CREW THAT THE SYSTEM WAS INOPERATIVE. THE WIRE CONNECTORS ARE IDENTICAL AND THE WIRE NUMBERS ARE SIMILAR IN APPEARANCE (G111A22 AND G71A22) CONTRIBUTING TO THE PROBLEM OF CORRECTLY MATCHING THEM. A FUNCTION TEST OF THE SYSTEM WOULD HAVE REVEALED THE PROBLEM.

CESSNA	CONT	BUSHING	MISINSTALLED	06/10/1999	
T210N	TSIO520R		CONNECTING ROD	1999070200016	1569

WHEN NR 2 CYLINDER WAS REMOVED FOR REPAIR, NOTED THE CONNECTING ROD BUSHING HAD BEEN PUSHED OUT OF THE CONNECTING ROD FOR A DISTANCE OF ABOUT .1250 INCH. FURTHER EXAMINATION OF THE ENGINE REVEALED 2 MORE BUSHINGS THAT HAD BEEN SIMILARLY DISPLACED. CLOSER EXAMINATION OF THE BUSHING REVEALED NO OBVIOUS REASON FOR ITS CONDITION BEYOND IMPROPER INSTALLATION OF THE PISTON PIN AT THE LAST CYLINDER REMOVAL AND RE-INSTALLING. THE ENGINE HAD BEEN 'TOP OVERHAULED' AT 1,208 HOURS SINCE MAJOR OVERHAUL. IT HAD BEEN OPERATED FOR 360.9 HOURS IN THIS CONDITION.

CESSNA	HEAT	CRACKED	06/07/1999	296
TU206G	K1250860M203	CABIN HEAT	1999062500398	

HEAT EXCHANGER IS PART OF COMPLETE KINLEY WELDING, INC., EXHAUST SYSTEM INSTALLED UNDER STC SA5010NM AND STC SE5009NM. THE HEAT EXCHANGER HAS HEAT TRANSFER STUBS WELDED TO ITS OUTER SURFACE FOR WARMING AIR FOR CABIN HEAT. TWO OF THESE STUDS WERE FOUND CRACKED LOOSE FROM THE EXCHANGER BODY DUE TO CRACKS IN THE BODY AROUND THE BASES OF THE STUDS. THE CRACKS OPENED UP ALLOWING EXHAUST GAS TO BLEED INTO THE HEATED CABIN AIR.

CONAER	AIR BOX	CRACKED	06/22/1999	
LA4200		AIR INTAKE	1999070900525	

PILOT REPORTED THAT WITH FULL THROTTLE AND THE WASTEGATE CLOSED, ENGINE HAD EXCESSIVELY LOW BOOST. (TURBO CHARGER INSTALLATION WAS AN AFTERMARKET INSTALLATION. ALSO, RECORDS WERE UNAVAILABLE AS OF THIS DATE TO DETERMINE AIRCRAFT TIMES, TURBO CHARGER STC, ETC).

DHAV	PWA	PIPE	CRACKED	06/09/1999	
DHC8102	PW120A	82950010271	HYDRAULIC	1999070900110	

(AUS) LT WING INBOARD ROLL SPOILER HYDRAULIC PIPE CRACKED ON A RADIUS. LOSS OF HYDRAULIC FLUID.

DHAV	PWA	PIPE	WORN	06/13/1999
DHC8102	PW120A	82970010175	HYDRAULIC	1999070900108
(AUS) HYDRAULIC PIPE WORN THROUGH. LOSS OF HYDRAULIC PRESSURE TO THE FORWARD LT LANDING GEAR DOOR ACTUATOR ALLOWING THE LT LANDING GEAR TO PUSH THE FORWARD DOOR OPEN AND SHEARING THE FORWARD DOOR CONNECTING ROD P/N 83231027-001. DAMAGE ALSO TO THE FORWARD LT DRAG LINK FAIRING.				
DHAV	PWA	DIODE	INTERMITTENT	06/17/1999
DHC8102	PW120A	MWD20E1	PROP GOVERNOR	1999070900127
(AUS) LT ENGINE PROPELLER FEATHER VALVE DIODE BLOCK INTERMITTENT IN OPERATION.				
DHAV	PWA	PIPE	LEAKING	06/04/1999
DHC8103	PW121		HYDRAULIC	1999070900128
(AUS) HYDRAULIC SYSTEM PIPE TO HYDRAULIC ANTI-SKID PRESSURE SYSTEM CHAFED AND LEAKING IN THE LT NACELLE AREA. THE PIPEHAD RECENTLY BEEN FITTED AS PART OF SB 8-29-29 (AD/DHC8/047).				
DHAV		TRIM	JAMMED	06/02/1999
DHC8202			ELEVATOR	1999070900095
(AUS) ELEVATOR TRIM SYSTEM JAMMED. THE JAMMING FREED ITSELF DURING LANDING. INVESTIGATION COULD FIND NO FAULTS IN THETRIM SYSTEM. SYSTEM LUBRICATED AND SYSTEM CHECKED OK THROUGH THE FULL RANGE.				
DOUG		BEARING	LOOSE	06/06/1999 200
600N			CRANK ASSY	1999061800155
DURING AN INSPECTION, FOUND THE FORWARD CRANK ASSY FOR LATERAL CONTROL HAD PLAY. REMOVED THE PART AND FOUND THE BEARING WAS LOOSE INSIDE.				
DOUG		BEARING	LOOSE	06/06/1999 201
600N			CRANK ASSY	1999061800156
DURING AN INSPECTION AND WORKING ON THE SAME TYPE OF HELICOPTER, INSPECTING THE FORWARD MAIN ROTOR CONTROL RODS AND BELL CRANKS. THIS HELICOPTER ALSO HAD A BAD FORWARD LATERAL CRANK ASSY. REMOVED THE CRANK AND ALSO FOUND THE BEARING WAS READY TO FALL OFF.				
DOUG		BEARING	LOOSE	06/06/1999 301
600N	600N76051		CRANK ASSY	1999061800260
BELLCRANK LOWER BEARING WAS LOOSE AND READY TO FALL OFF WHEN PART WAS REMOVED FROM BRACKET ASSY.				
DOUG	PWA	ENGINE	FAILED	06/17/1999
DC3C	R183092		OIL COOLER	1999071600015
APPROXIMATELY 45 MINUTES AFTER TAKEOFF, PILOT NOTICED OIL PRESSURE DROPPING. ENGINE WAS SECURED AND PROPELLER FEATHERED WHEN MINIMUM PRESSURE WAS OBTAINED. MAINTENANCE FOUND THE ENGINE OIL OUT TO OIL COOLER IN LINE HAD BROKEN. LINE WAS REPLACED AND OIL TANK REFILLED. ENGINE GROUND RAN, NO LEAKS NOTED. AIRCRAFT RETURNED TO SERVICE.				
EMB	PWA	PWA	ENGINE	FAILED
EMB120	PW118A	PW118A	115093	RIGHT
06/01/1999 1999070900125				
(AUS) RT ENGINE FAILED. INVESTIGATION FOUND METAL ON THE REDUCTION GEARBOX CHIP DETECTOR. THE REDUCTION GEARBOX WASFOUND TO BE UNCOUPLED FROM THE POWER TURBINE. ALL POWER TURBINE BLADES MISSING. LOW PRESSURE COMPRESSOR JAMMED. TORQUE SENSOR DAMAGED. TORQUE SHAFT DAMAGED. FRONT AIR INLET CASE CRACKED AND DAMAGED. MINOR DAMAGE TO EXHAUST DUCT FROMEXITING TURBINE BLADES.				
EMB	PWA	PLUG	FAULTY	06/08/1999
EMB120	PW118A	P1761	TE FLAP	1999070900107
(AUS) LT OUTBOARD FLAP ACTUATOR PLUG CONTAINED BROKEN WIRES INSIDE THE PLUG BACK SHELL POTTING.				
EMB		WEIGHT	CORRODED	06/07/1999 17216
EMB120RT	12008080002	12017933002	RT AILERON	1999070200067
DURING EXPORT CERTIFICATE OF AIRWORTHINESS COMPLIANCE, THE IMPORT COUNTRY REQUIRED C/W BRAZILIAN AD NR 98-01-02, DATED 1-15-98. INSPECTION OF THE AILERON MASS BALANCE WEIGHTS FOUND ALL WEIGHTS BROKEN AND CORRODED. TWO OTHER EMB-120RT AIRCRAFT WERE INSPECTED FOR SAFETY CONCERN, BOTH AIRCRAFT HAD ALL WEIGHTS CORRODED AND FOUR OF THE SIX WEIGHTS ON EACH AIRCRAFT WERE BROKEN. FOLLOWING ACFT S/N'S AND AILERON S/N'S WERE FOUND DEFECTIVE: EMB-120RT, SN 120046, LT AILERON, SN 120054, AND, RT AILEIRON, SN 120054. EMB-120RT, SN 120045, LT AILERON, SN 120056, AND, RT AILERON, SN 120056.				

EMB		WEIGHT	CORRODED	06/07/1999	17216
EMB120RT	12008080001	23017933001	LT AILERON	1999070200080	
DURING EXPORT CERTIFICATE OF AIRWORTHINESS COMPLIANCE, THE IMPORT COUNTRY REQUIRED C/W BRAZILIAN AD NR 98-01-02, DATED 1-15-98. INSPECTION OF THE AILERON MASS BALANCE WEIGHTS FOUND ALL WEIGHTS BROKEN AND CORRODED. TWO OTHER EMB-120RT AIRCRAFT WERE INSPECTED FOR SAFETY CONCERN, BOTH AIRCRAFT HAD ALL WEIGHTS CORRODED AND FOUR OF THE SIX WEIGHTS ON EACH AIRCRAFT WERE BROKEN. THE FOLLOWING AIRCRAFT AND AILERON SERIAL NUMBERS WERE FOUND DEFECTIVE: EMB-120RT, SN 120046, LT AILERON, SN 120054; RT AILERON, SN 120054. EMB-120RT, SN 120045, LT AILERON, SN 120056; RT AILERON, SN 120056.					
GULSTM		VALVE	FAILED	06/12/1999	
500S			COCKPIT	1999070900520	
AFTER GEAR WAS RAISED, ON THE NEXT GEAR EXTENSION, THE VALVE MALFUNCTIONED AND GEAR DID NOT EXTEND. REFERENCE ACCIDENTNR NYC99LA139. PART S/N 12-6-84-407-14A 3126-1.					
GULSTM		CLEVIS	FAILED	06/17/1999	2755
690C	210015	ED12758	LT MLG	1999070200332	
THE LEFT MAIN LANDING GEAR INBOARD RETRACT CYLINDER CLEVIS BROKE CAUSING THE LEFT MAIN GEAR TO COLLAPSE ON LANDING. THE LEFT GEAR INBOARD EXTENSION/RETRACTION ACTUATOR IS CONNECTED TO THIS RETRACT CYLINDER CLEVIS. THIS IS THE PHYSICAL CONNECTION BETWEEN THE ACTUATOR AND THE STRUT TO EXTEND AND RETRACT THE LANDING GEAR. THIS FORKED CLEVIS IS ATTACHED TO THE ACTUATOR AND IS INSERTED 2.250 INCHES INTO THE MAIN LANDING GEAR STRUT. THE FRACTURE OF THIS CLEVIS STARTS .3750 INCH FROM THE BOTTOM OF THE SHAFT, IS PERPENDICULAR TO THE SHAFT COVERING 60 PERCENT OF THE CIRCUMFERENCE. A SEPARATE FRACTURE ORIGINATES FROM THIS FRACTURE UP DIAGONALLY .25 INCH FROM THE BOTTOM OF THE SHAFT					
GULSTM		RIB	BUCKLED	06/08/1999	4247
AA5A	5200004502		WS 66	1999071600009	
UPON OPENING LT WING FUEL TANK ACCESS PANELS FOR SEALANT INSPECTION, FOUND AFT PORTION OF THE WING RIB AT WS 66 BUCKLED. OWNER ADVISED THE PREVIOUS OWNER OF THE ACFT HAD TOLD HIM AT ONE TIME, UNKNOWN TO THE PILOT, THE LT FUEL TANK VENT HAD BECOME PLUGGED WITH AN INSECT NEST. DURING FLIGHT, THE PILOT NOTED THE SKIN ON THE FUEL TANK OF THE LT FUEL TANK WAS DISTORTED. AFTER LANDING, THE NEST WAS DISCOVERED AND CLEANED OUT. APPARENTLY NO FURTHER CHECK FOR INTERIOR DAMAGE WAS CONDUCTED. IT APPEARS THE ACFT HAS BEEN FLYING AROUND FOR AT LEAST 6-7 YEARS WITH THIS DAMAGED RIB.					
GULSTM	BRUCE	RECEPTACLE	CRACKED	06/04/1999	1114
GIV	BC1004517		CABIN	1999062500459	
DURING A 12-MONTH INSPECTION REQUIREMENT ON THE BRUCE LIGHTING SYSTEM, TWO LAMP ASSEMBLIES WERE FOUND TO HAVE CRACKED RECEPTACLES. P/N BB 10020-03-94 CAGE 17023. SUBMITTER BELIEVED THIS WAS CAUSED BY THE SPRING TENSION ON THE LAMP. RE: CUSTOMER BULLETIN NR 98.					
LEAR		VALVE	WRONG PART	06/24/1999	
24B			STATIC SYSTEM	1999070200340	
WHILE TROUBLESHOOTING PILOT'S SIDE STATIC SYSTEM FOR LEAKS, FOUND THE ALTERNATE STATIC SOURCE CONTROL VALVE WAS NOT THE PROPER LEARJET VALVE. THE VALVE THAT WAS INSTALLED WAS A HARDWARE STORE VARIETY NATURAL GAS VALVE. IT WAS FOUND THAT THIS VALVE LEAKED. IT IS UNKNOWN WHY THIS VALVE WAS INSTALLED. THE VALVE WAS REPLACED WITH THE CORRECT PART.					
LEAR	PURITANBENET	OXYGEN MASKS	FAILED	06/18/1999	
55LEAR		C3512000	CABIN	1999070900519	
INSPECTED CABIN OXYGEN MASKS IN C/W AD 99-08-21. FOUND FIVE CABINS OXYGEN MASKS WITH CURE DATES FROM 1983 TO 1991 TO BE TORN. AD 99-08-21 REFERS TO OXYGEN MASKS WITH CURE DATES FROM SEPTEMBER, 1993 TO MARCH, 1997. THIS AD SHOULD REQUIRE THAT ALL OXYGEN MASKS BE INSPECTED FOR THIS DEFECT.					
MAULE		CABLES	CHAFED	06/07/1999	
MX7180A			AILERON	1999072000001	
WHILE PERFORMING A UNIFORMITY INSPECTION. FAA INSPECTORS DISCOVERED THE LT AND RT LOWER AILERON CABLES FRAYED WHERE THEY EXIT THE LOWER WING SKIN AT THE FAIRLEAD, APPROXIMATELY 4 INCHES FROM THE THIMBLE EYE SPLICE. FAA INSPECTORS DISCOVERED THE LT AND RT LOWER AILERON CABLES FRAYED WHERE THEY EXIT THE LOWER WING SKIN AT THE FAIRLEAD, APPROX 6 INCHES FROM THE THIMBLE EYE SPLICE. APPEARED RT CABLE WORE THROUGH FAIRLEAD THEN BEGAN CHAFING ON THE WING SKIN ITSELF. CAUSE OF LT CABLE FRAY IS UNDETERMINED, BUT IT APPEARS INSPECTION COVER ADJACENT TO FAIRLEAD CAN BE POSITIONED CAUSING CABLE TO 'RIDE HARD' AGAINST ONE EDGE OF THE FAIRLEAD. ACFT AND PART TT: 88 HOURS.					

MAULE		BULKHEAD	CRACKED	06/22/1999	100
MX7180A			SPINNER	1999072000004	
WHILE C/W A100-HOUR INSPECTION, THE SPINNER BULKHEAD WAS FOUND CRACKED AT ALL THE ATTACH BOLT					
MOONEY	LORINORDAM	COOLER	LEAKING	06/01/1999	
M20		8542228	OIL SYSTEM	1999062500391	
PART RECEIVED EPOXY REPAIRS THAT FAILED DURING NORMAL SERVICE. EPOXY WAS USED OVER CRACKS WHICH WORKED THROUGH TO THE SURFACE OF THE HARDENED EPOXY ALLOWING THE OIL COOLER TO LEAK AGAIN. SUBMITTER STATED EPOXY FAILURE IS COMMON IN OIL COOLERS AND RECOMMENDED ELIMINATING EPOXY USE IN OIL COOLERS. REF: P.O.C.S. W/O NR 21054.					
MUDRY	LYC	LYC	PLUG	WORN	06/04/1999
CAP10B	AEIO360B2F	AE10360B2F	60828	ENGINE	1999070900100 455
(AUS) NR 2 CYLINDER PISTON PIN PLUG WORN. PISTON OIL RING LANDS DAMAGED. METAL CONTAMINATION OF THE ENGINE OIL SYSTEM.					
MUDRY	LYC		PLUG	FAILED	06/07/1999
CAP10B	AEIO360B2F		60828	ENGINE	1999070900130
(AUS) NR 2 PISTON PIN PLUG WORN AWAY. PLUG HAD WORN INTO THE PISTON OIL RING LAND. THE ENGINE WAS INSPECTED AND ALL OTHER PISTON PIN PLUGS WERE FOUND WITH VARIOUS DEGREES OF WEAR. THE ENGINE HAD BEEN FITTED WITH NEW CYLINDER KITS IN APRIL 1998.					
PIPER		VALVE	RUPTURED	06/06/1999	9516
PA23250			MLG	1999062500456	
POST GEAR-UP LANDING INSP REVEALED FOLLOWING: FOUND LT GEAR SEQUENCER VALVE HYD LINE, BEHIND LT UPHOLSTERY PANEL, CHAFED, RUPTURED. LT RUDDER CABLE PASSES UNDER THIS LINE AND HAD CHAFED APPROX 2 INCHES OF THE LINE WHICH ALLOWED PRIMARY HYD FLUID TO BE DUMPED OVERBOARD. WHEN PILOT ATTEMPTED TO USE AUX HAND PUMP, REMAINING BACKUP FLUID WAS DUMPED. RECOMMEND A ONE-TIME INSP OF AREA ON RT AND LT SIDES TO DETERMINE CLEARANCES BETWEEN CABLES, WIRES, HYD LINES. WHEN EMERG CO2GEAR EXT SYS ACTIVATED, CABLE HOUSING TO PRIORITY VALVE SLIPPED WHICH ALLOWED CO2 BOTTLE TO BLOW, DID NOT PULL PIN ON PRIORITY VALVE, CO2 NOT DIRECTED TO THE MAIN DOWN POSITION. RECOMMEND BETTER SECURITY OF					
PIPER	RIVET	SHEARED	06/26/1999	4393	
PA24250			SPAR	1999071600011	
ALL RIVETS WERE FOUND SHEARED THAT ATTACH THE REAR WING SPAR ATTACHMENT BRACKETS TO THE REAR CENTER SECTION SPAR. (BOTH LEFT AND RIGHT SIDES). DISCOVERED DURING ANNUAL INSPECTION.					
PIPER		LINE	FAILED	06/08/1999	3398
PA28140			M52874140110 RT BRAKE	1999070200012	
DURING GROUND RUN-UP IN PREPARATION FOR AN ANNUAL INSPECTION, THE RIGHT BRAKE LINE BLEW OUT AT THE MASTER CYLINDER CONNECTION. DATE CODE ON HOSE WAS 12-64.					
PIPER	LYC	PIPER	NUT	CRACKED	06/10/1999
PA28R180	IO360B1E	BRACKET	AN3209	LT & RT MLG	1999070900097
(AUS) LT AND RT MAIN LANDING GEAR SIDE BRACKET SUPPORT NUTS CRACKED. FOUND DURING MAGNETIC PARTICLE INSPECTION.					
PIPER			SPINNER	CRACKED	06/04/1999
PA31350			PROPELLER	1999070900102	
(AUS) RT PROPELLER SPINNER CRACKED. ONE SCREW MISSING AND SPINNER SKIN PEELING BACK. CRACK LENGTH 50.8 MM (2 INCHES).					
PIPER			CIRCUIT	FAILED	06/11/1999
PA31350			454630	COCKPIT	1999062500352
PILOT REPORTED THE LANDING GEAR HANDLE WOULD NOT RETURN TO NEUTRAL POSITION AFTER TAKEOFF. THE LANDING GEAR WAS EXTENDED AND ALL THREE GEAR DOWN INDICATORS CAME ON, BUT THE GEAR HANDLE WOULD SITLL NOT RETURN TO NEUTRAL POSITION. A PRECAUTIONARY LANDING WAS MADE. AFTER INSPECTION, IT WAS DETERMINED THE GEAR SAFETY CIRCUIT BREAKER HAD FAILED. THE CIRCUIT BREAKER WAS CHECKED FOR RESISTANCE IN THE CLOSED POSITION AND FOUND TO BE ABOVE 70,000 OHMS. THIS CAUSED THE MAIN GEAR DOOR ACTUATOR TO STAY OPEN WHICH INHIBITED THE HANDLE FROM RETURNING TO THE NEUTRAL POSITION. THE CIRCUIT BREAKER WAS REPLACED. THE SYSTEM WAS TESTED, AND THE AIRCRAFT WAS RETURNED TO SERVICE.					
PIPER	LYC		ENGINE	FIRE	06/04/1999
PA31350	TIO540J2BD			LEFT	1999070900101

(AUS) LT ENGINE FIRE CAUSED BY MAIN ALTERNATOR WIRE TO NOISE FILTER BEING DAMAGED AND IGNITING OIL IN THE COWLING. DAMAGE CAUSED TO THE ALTERNATOR WIRE, FILTER BOWL AND TWO HOSES.

PIPER	LYC	CYLINDER	FAILED	06/29/1999	232
PA31350	TIO540J2BD		ENGINE	1999071600356	

AIRCRAFT DEPARTED SALT LAKE CITY FOR ST GEORGE, UT. DURING CLIMB, ENGINE BEGAN RUNNING VERY POORLY. ENGINE WAS FEATHERED. AIRCRAFT MADE UNEVENTFUL LANDING. INSPECTION OF ENGINE FOUND NR 5 CYLINDER ASSY FAILED. PISTON CONDITION VERY BAD. PRE-IGNITION ON VERY LEAN BURN SUSPECTED. NO PREVIOUS REPORTS OF PROBLEMS OF THAT NATURE.

PIPER		TRUNNION	CRACKED	06/22/1999	
PA32RT300T		6705403	NLG	1999071600014	

DURING ANNUAL INSPECTION, SUBMITTER FOUND NUMEROUS CRACKS (7) IN MULTIPLE LOCATIONS ON NOSE GEAR TRUNNION. UPON FURTHER DISASSEMBLY OF NOSE GEAR TRUNNION, MORE CRACKS WERE FOUND INSIDE TRUNNION. THESE CRACKS COULD NOT BE SEEN UNLESS NOSEGEAR WAS DISASSEMBLED. NO CAUSE OTHER THAN FATIGUE COULD BE ESTABLISHED.

PIPER		FITTING	CORRODED	06/28/1999	2605
PA32RT300T		3839402	RUDDER	1999071600019	

UPON REMOVAL OF RUDDER FOR C/W AD 79-26-04 AND PIPER SL 882A, IT WAS NOTED THE LOWER RUDDER ATTACH BOLTS WERE APPROXIMATELY 40 PERCENT CORRODED. THIS WAS CAUSED BY WATER ENTRAPMENT IN THE LOWER RUDDER ATTACH TUBE. THE TUBE CONTAINED WATER WITH NO DRAINS PROVIDED FOR THE DRAINAGE OF THE WATER, THE CROSS RETENTION WAS CORRODED IN THE CENTER. SUBMITTER SUGGESTED THIS COULD EVENTUALLY CAUSE FAILURE OF THE ATTACH BOLTS AND LOSS OF RUDDER CONTROL.

PIPER		CLEVIS BOLT	BENT	06/08/1999	67
PA34200	9532900	400692	NLG	1999070900523	

THE NOSE GEAR FAILED DUE TO EXCESS PLAY IN OVERCENTER LINKAGE. THE EXCESS PLAY WAS FROM A BENT CLEVIS BOLT WHICH INSTALLS THROUGH THE DOWNLOCK LINK ASSY AND THE OVERCENTER LINKAGE. SUBMITTER STATED THE CLEVIS BOLT WAS MOST LIKELY BENT DUE TO A HARD LANDING WHICH WAS NOT REPORTED.

PIPER		ROD END	BROKEN	06/07/1999	
PA38112		452860	AILERON	1999062500402	

DURING FLIGHT, LT AILERON WOULD NOT RESPOND TO CONTROLS. FOUND AFT LT ROD END BROKEN AT AFT SIDE OF LOCKNUT AND BEARING END FROZEN AND IMMOVABLE, EVEN AFTER REMOVAL. PILOT NOTICED AILERONS LOCKED ON GROUND WITH SEAT BELTS WITH LEFT AILERON DOWN POSITION WHEN TIED DOWN. ALSO, ROD END LOWER HALF WAS CORRODED. SUBMITTER RECOMMENDED NOT TO LOCK AILERONS IN THIS POSITION CAUSING OXYGEN TO BUILD-UP AROUND ROD END.

PIPER		UPLOCK	MISMANUFACTURE	06/01/1999	
PA42720		WTC22151	NLG	1999070900023	

EMERGENCY UPLOCK RELEASE ACTUATOR, PN WTC 2215-1, WAS ORIGINALLY REPLACED BECAUSE OF LEAK (HYD) AT ROD END. WHEN 'NEW' PART WAS INSTALLED (SAME P/N), IT LEAKED FROM END CAP. AFTER THIS, TWO OTHER ACTUATORS WERE TRIED WITH SAME RESULTS. THEY LEAKED WHILE PERFORMING MAIN/NOSE LANDING GEAR OPERATIONAL CHECKS. PIPER P/N 551 968. S/N'S AFFECTED: WTC1072; WTC1190; WTC1202; WTC1268; WTC1317;

PIPER		STRUCTURE	DAMAGED	06/16/1999	514
PA46350P			LT/RT WING	1999070200271	

AIRCRAFT ENCOUNTERED CLEAR AIR TURBULENCE AT 17,500 FEET WHICH CAUSED THE LEFT AND RIGHT INBOARD WING STRUCTURE TO BUCKLE.

RAYTHN		CABLE	MISMANUFACTURE	06/02/1999	
HAWKER800XP		25CP221527	ELEVATOR	1999070900019	

UPON COMPLIANCE OF INSPECTION, ELEVATOR CABLES WERE FOUND DAMAGED IN THE SAME AREA ON ALL FOUR AIRCRAFT. THIS CABLE DAMAGE APPEARED TO BE INCORRECT MANUFACTURING OR MISHANDLING OF CABLES. CABLE SEGMENT AFT OF CABLE REINFORCEMENT APPEARS TO BE UNRAVELING.

RHNFLU		HOSE	LEAKING	06/05/1999	
EA300L		PC01786	FUEL TANK	1999070200270	

FUEL HOSE CONNECTS FUSELAGE FILLER NECK WITH MAIN FUSELAGE TANK. HOSE SEPARATED FROM TOP OF TANK AT RANGE AND ALLOWED FUEL TO ENTER COCKPIT. HOSE WAS FOUND CUT TOO SHORT FROM FACTORY ALLOWING ENOUGH CLEARANCE AT TOP FOR IT TO BACK OFF OF TANK FLANGE. FLEXING OF SKIN OF AIRCRAFT CONTRIBUTED

SKRSKY		GENERATOR	MALFUNCTIONED	06/17/1999	
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S76A	7655009005110	AC SYSTEM	1999062500545
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A.C. GENERATOR BEARING LIGHT CAME ON IN-FLIGHT. INSPECTED BY ACCESSORY OVERHAUL SHOP AND FOUND BEARINGS WERE ROUGH.

SKRSKY	TMECA	ENGINE	MAKING METAL	06/04/1999
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S76C	ARRIEL1S	0292005250	NR 1	1999070900117
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(AUS) NR 1 ENGINE REAR BEARING CHIP DETECTOR CONTAMINATED WITH METAL CHIPS. ENGINE REMOVED. SUSPECT BEARING FAILURE.

SNIAS	BEARING	ROUGH	07/08/1999
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AS350B2	350A33200405	T/R SPIDER	1999071600165
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BEARING ROUGH WHEN ROTATING. REFERENCE: MA NR R019985.

SNIAS	BEAM	CRACKED	06/23/1999	5529
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AS350BA	350A21136227	FUSELAGE	1999071600332
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DURING 100-HOUR INSPECTION, FOUND CRACKS AT THE AFT END IN THE RADIUS OF REINFORCEMENT ANGLES, PN 350A21-1362-27, DASH 28. CRACK ON LEFT SIDE (DASH 27) WAS 2.25 INCHES LONG, CRACK ON RT SIDE (DASH 28) IS 1.0 INCH LONG. MANUFACTURER WAS NOTIFIED AND ANGLES WERE REPLACED.

SWRNGN	GARRTT	OZONE	BRAKE	FAULTY	06/13/1999
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SA227AC	TPE33111U	LHMLG	212033	LT MLG	1999070900139 142
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(AUS) LT MAIN LANDING GEAR BRAKE ASSEMBLY OVERHEATED AND CAUSED PAINT AND GREASE ON THE WHEEL TO CATCH FIRE. SUSPECT CAUSED BY A PINCHED PISTON SEAL WHICH OCCURRED DURING ASSEMBLY.

UROCOP	FLANGE	CRACKED	06/23/1999	1217
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EC135P1	L535A1501210	TAIL BOOM	1999071600342
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FOUND CRACK WHERE NR 1 TAIL ROTOR DRIVE SHAFT BEARING MOUNTS TO CONNECTING FLANGE. CRACK FOUND DURING C/W ECA5B EC135-53A-010 INSPECTION OF CONNECTING FRAME FLANGES CAUSED BY TOO FLEXIBLE OF A TAIL BOOM. MANUFACTURER IS WORKING ON A RESOLUTION. AIRCRAFT TOTAL TIME: 1,217.1 HOURS.

UROCOP	BLADE	CRACKED	06/25/1999	783
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EC135P1	L621M1010054	MAIN ROTOR	1999071600343
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FOUND HARILINE CRACKS (8 EACH) EXTENDING CHORDWISE ALL THE WAY AROUND THE NICKLE LEADING EDGE EROSION PROTECTION STRIP. CRACKS COULD NOT BE SEEN UNTIL A THOROUGH CLEANING OF THE BLADE LEADING EDGE WAS PERFORMED (REMOVAL OF BUGS/CARBON). SUBMITTER RECOMMENDED CLEANING AND VISUAL INSPECTION OF MAIN ROTOR BLADES AT REGULAR INTERVALS.

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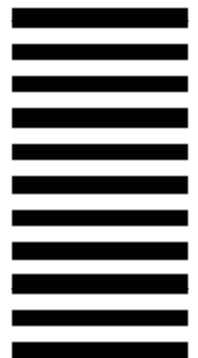
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